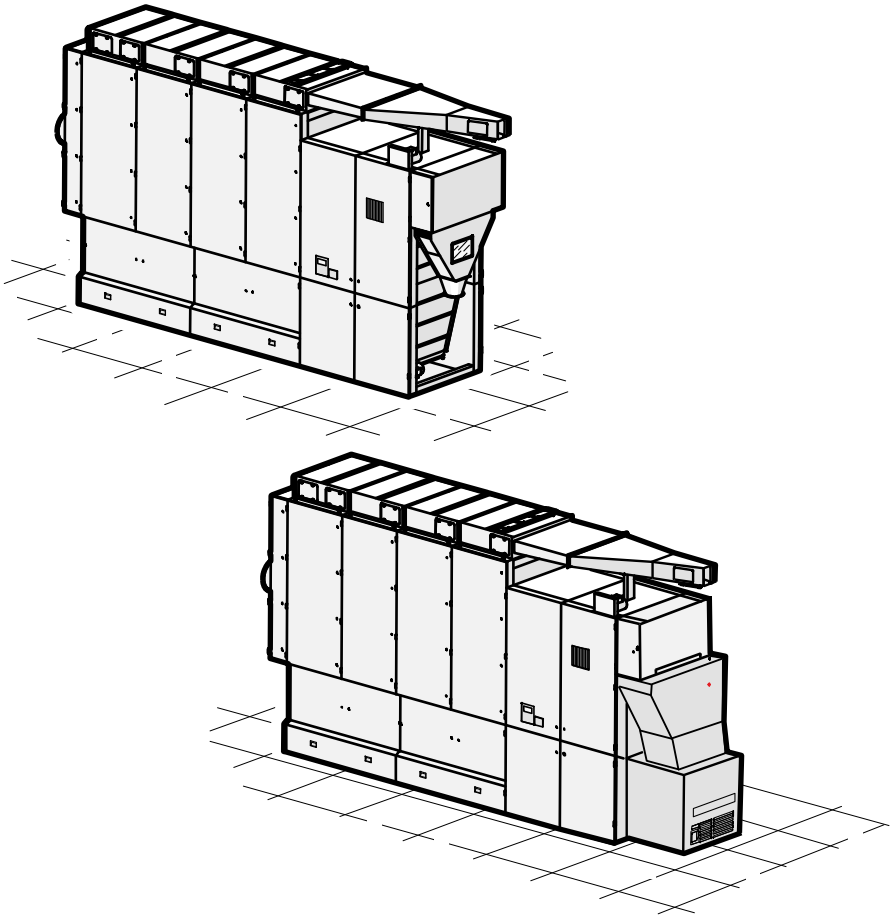
RIETER

Translation of the original instructions

UNImix B 76



These instructions must be issued to the persons carrying out the tasks described herein. Unless they are accessible to such persons at all times, these instructions cannot fulfil their purpose.

Rieter Textile Systems
Klosterstrasse 20, 8406 Winterthur

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Preface

The information contained in these instructions is intended to assist the smooth, trouble-free running of the machine and the safety of operators and maintenance personnel.

The instructions contain important notes on how to operate the machine safely, properly and efficiently. By observing these instructions you can help prevent danger, reduce repair costs and downtimes, as well as increasing the reliability and lengthening the service life of the machine.

The operating instructions must be permanently available at the place where the machine is located.

The instructions must be read and followed by everyone who is assigned to work on the machine.

The instructions correspond to the technical state of the art at the time of going to press.Rieter reserves the right to carry out modifications.

Inquiries concerning Service information should be addressed to the Service Centre responsible for your region.

The instructions must be completed as necessary by adding directions based on existing national regulations for the prevention of accidents and the protection of the environment.

RIETER

EC Declaration of Conformity

Maschinenfabrik Rieter AG declares under sole responsibility that the product

UNImix B76

Serial Nr. 400176160-xxxx

to which this declaration relates is in conformity with the following standards.

EN ISO 11111-1 Part 1:2009, EN ISO 11111-2 Part 2:2009, EN 60204-1:2006 Part 1

Following the provisions of Directives:

Machinery Directive 2006/42/EC
Electromagnetic Compatibility Directive 2004/108/EC

including their modifications

Responsible for the technical documentation is: Guido Lifard, Product Safety Officer, Maschinenfabrik Rieter AG, Klosterstrasse 20, 8406 Winterthur, Switzerland

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Head Development Opening and Carding

Winterthur, 04. April 2014

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B 76

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Part 1

General

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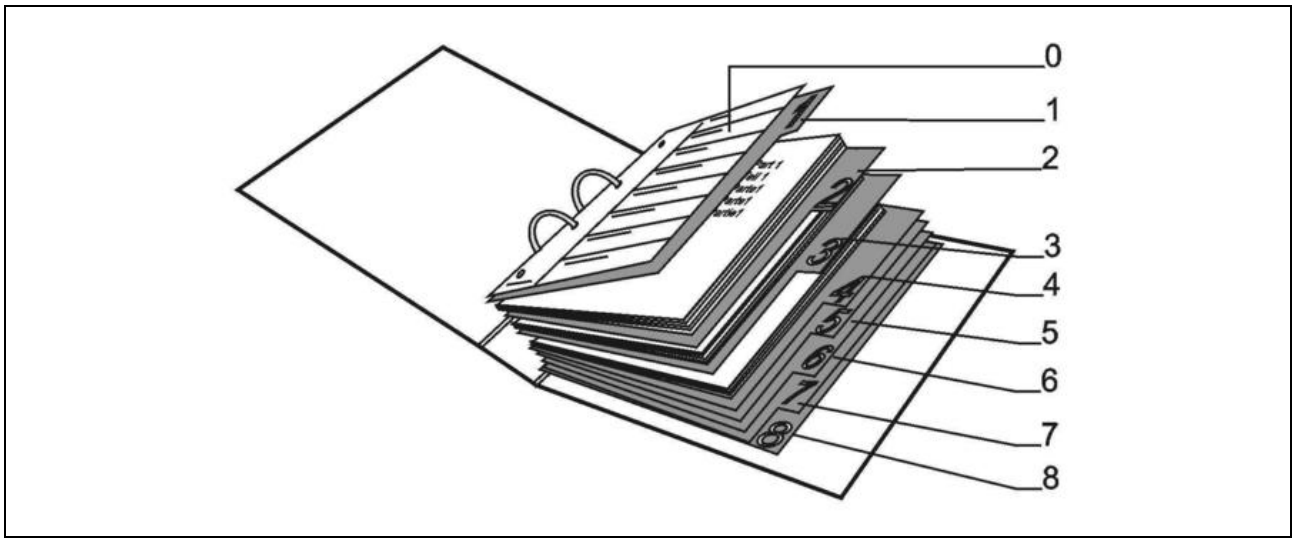
1 How to use the operating instructions

1.1 Structure of the operating instructions

Structure of the operating instructions



0 Preface, Register, Table of contents of file

The operating instructions are divided into parts.

Each part deals with specific subjects and is intended for particular users.

1 Part 1: General

General information, information about planning installations.

2 Part 2: Operation

Contains all the information with which the operator must be familiar in order to operate the product safely.

3 Part 3: Setting up, preparing, adjusting

Contains information about setting up the plant to meet the specific requirements and adapting it to the environment, especially as regards the material to be processed, and optimizing quality and productivity.

4 Part 4: Maintenance

Contains all necessary information about the internal planning of maintenance work This part contains detailed instructions for cleaning and lubrication

For more details about maintenance work such as changing wearing parts, checks and settings, please see cross-reference to the description in Part 6.

5 Part 5: Troubleshooting

The information provided in this part is intended to assist in finding and eliminating the cause in the event of a malfunction (malfunctions, warnings, messages).

6 Part 6: Description of machine subassemblies

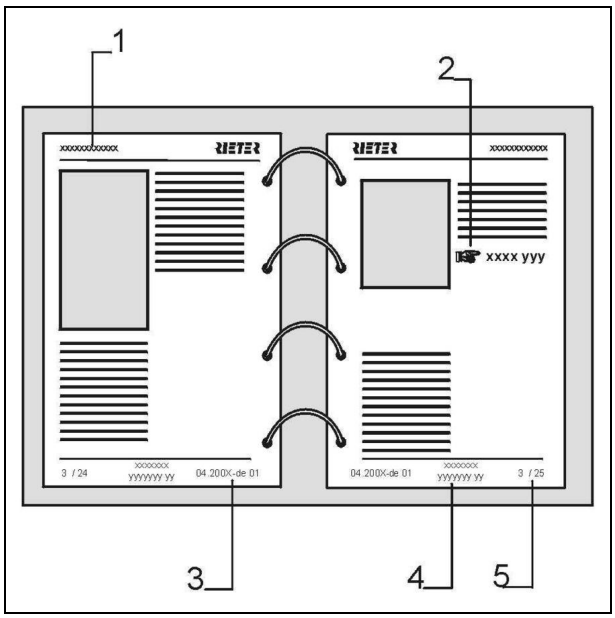
This section lists the following task descriptions arranged by subassembly: Settings, checking and installation/dismantling tasks.

All job descriptions for a subassembly and the necessary information concerning the function of a subassembly are grouped together in sections.

7 Part 7: Keyword index

8 Part 8: Appendix

Example of a page with orientation elements



1 *Description of a section*

2 *Cross-reference indicating page*

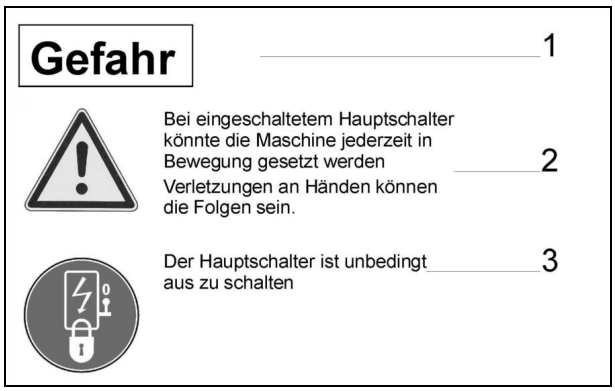
3 *Date of publication, language and version of document*

4 *Machine type and name of part*

5 *Part / Page*

1.2 Symbols in the document

Example of a note on safety



1 Signal word

"Danger", "Warning", "Caution", "Important" classify the safety precautions.

2 Risk

Description of the risk situation The potential consequences of the damage are also described. The description of the risk involved is emphasized by a symbol.

3 Directions for avoiding danger

Description of what needs to be done or avoided in order to prevent accidents and damage occurring. The direction for avoiding danger can be emphasized by a command or prohibition symbol.

It is absolutely essential to observe the safety precautions.

Safety precautions are classified and highlighted by signal words.

The example shows a safety precaution indicated by the signal word "Danger".

DANGER

Maximum danger level. This is used in the case of risks where there are very far-reaching consequences, with fatal injuries, irreversible or incurable injuries and very serious but curable injuries "DANGER" is only used when damage is highly likely to occur due to improper behavior

WARNING

Second highest level of danger used for risks where there are far-reaching consequences, the same as at maximum danger level.. Unlike maximum level, "WARNING" is used where the probability of damage occurring in the case of improper behavior is only slight.

CAUTION

Moderate level of danger is used in the case of risks where the consequences are less serious, completely curable injuries to only slight injuries with short absence from work. Also used for damage to property with far-reaching consequences.

IMPORTANT

Low level of danger is used when there is a risk of slight damage to property.

Danger symbols

Risk of falling

General hazard area

Suspended load

Risk of injury

Risk of injury due to part of the body being pulled in

Risk of injury due to being pulled in

Hazardous voltage

Electric shock from capacitor

Hazard due to automatic start-up

Laser beam

Prevention symbols

Use eye protection

Wear protective footwear

No admittance

Shut down power before working on the installation.

Switch off via the main switch and secure switch with a padlock

Press EMERGENCY STOP button

Do not touch

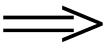
Symbols in the document

The page indicated refers to the currently selected chapter.

More information on this subject can be found on the page indicated

Incorrect application, not permissible

Correct application, OK



Outcome. For example, after an operation step

2 Legal stipulations

2.1 Liability

If, contrary to regulations, the assembly of new or existing plant is carried out by a third party, RIETER MACHINE WORKS LTD. declines all liability.

The auxiliary agents supplied by Rieter such as crane, roll lifter etc.must be used only at the places and on the types of machine intended and for no other purpose .RIETER MACHINE WORKS LTD. declines all responsibility for any damage due to inappropriate usage of the auxiliary agents

If the machine is used for any purpose other than that for which it is intended, RIETER MACHINE WORKS LTD. declines all liability.

3 General notes on safety

3.1 Safety precautions

Intended use

This machine is intended solely for the processing of cotton and 100% man-made fibres, along with blends of such materials.

See “Raw materials for processing” in the “Technical data” chapter.

Only closed rooms with suitable air-conditioning for spinning technology are to be used for machine operation.

The machine is to be used only as intended.

Operate the machine only according to this operating manual.

Any use beyond the intended purpose is regarded as improper use, in particular using materials hazardous to health, such as asbestos, glass, etc.

Technical state

If the machine is operated while in a defective state, safety, proper functioning and availability will be compromised.

Operate the machine only while it is in a technically fault-free state.

Comply with the maintenance schedule.

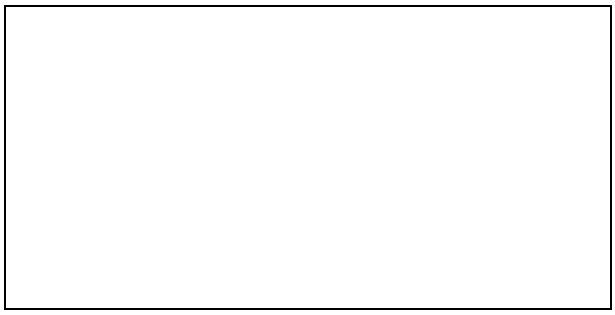
Use only original spare parts (indicated in the spare parts catalogue).

If the operating behaviour of the machine changes, check the machine for faults.

Remedy the faults immediately.

Do not make unauthorised modifications or changes to the machine.

Availability of the operating manual



The operating manual must be available to the personnel involved.

Personnel must have read and understood the operating manual, prior to commencing work.

Safe practice

For reasons of operability, it is not possible to completely eliminate all sources of danger.

“Overestimation of one’s capabilities” is a major source of danger.

Even routine tasks require full attention at all times.

Qualification of personnel

Unqualified personnel cannot recognise risks and are therefore exposed to dangers.

Only technically qualified personnel are to be assigned tasks at the machine (described in this operating manual).

Installation, operating, maintenance and service personnel must have been trained.

Have the operating authority ensure that personnel comply with the locally applicable rules and regulations for safe and hazard-conscious work.

Have the operating authority specify and make known the responsibilities for tasks. Keys and passwords are to be given to assigned personnel only.

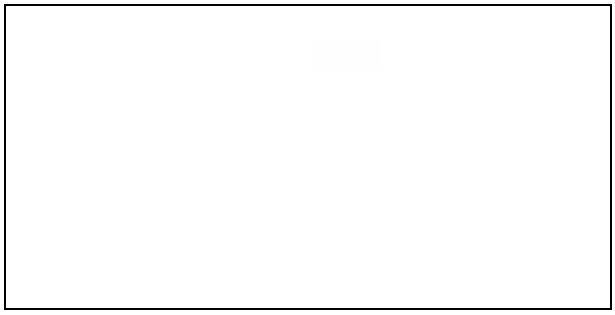
Qualification of different types of personnel:

Maintenance technician: On account of their vocational education and training by the manufacturer of the machine, as well as the job assigned to them, maintenance technicians are in a position to recognise hazards or residual risks that exist during maintenance of the machine, and to take appropriate measures.

Operator: After being trained by the manufacturer or the operating authority, operators are in a position to recognise hazards or residual risks that exist during operation of the machine, in order to guarantee the safe operation of the machine.

Electrical technician: Maintenance work involving the electrical equipment may only be carried out by electrical technicians (electricians, master electricians, electromechanical technicians, mechatronics technicians, electrical engineering technicians, electrical engineers).

Access to the machines



Only trained and authorised personnel are to have access to the machines.

Personal protective equipment

Ear protection:

During operation, high levels of airborne noise are emitted at the machine, which can result in hearing damage.

Use ear protection in accordance with EN 352.

Safety shoes:

At the machine, there is a risk of injury to the feet due to falling objects.

Wear safety shoes in accordance with EN ISO 20345 (category S3).

Safety gloves for oils and antifreeze agents:

There is a risk of injury to the hands when handling oils and antifreeze agents.

Wear nitrile safety gloves in accordance with EN 374.

Thermal-protection gloves:

Surfaces at the machine can become hot.

Wear thermal-protection gloves in accordance with EN ISO 11611.

Safety glasses:

When using compressed air during cleaning tasks, there is a risk of eye injury.

Wear safety glasses at all times.

When carrying out grinding work for maintenance purposes, there is a risk of eye injury.

Wear safety glasses at all times.

Clothing

Use of appropriate clothing minimises the risk of accident.

Do not wear loose clothing (such as scarves, ties, clothing with wide open sleeves, etc.).

Cover hair if it is long. Wear a cap or a hairnet at all times.

Do not wear rings on fingers or wristwatches.

Protection against inadvertent start-up

If the machine starts up inadvertently, persons working at the machine can be seriously injured as a result.

Set the main switch or the safety switch to the “0” position and attach a lock to the switch.

Remove the key and keep it on your person.

Protective devices

The safety of persons will be compromised if protective devices do not function effectively.

Prior to operating the machine, ensure that all protective devices are functioning effectively.

Do not remove tightly screwed-on covers, viewing windows and pipes unless the machine is in a safe operating state.

Safe operating state:

The main switch or the safety switch is in the “off” position and secured with a lock. There must be no active machine processes.

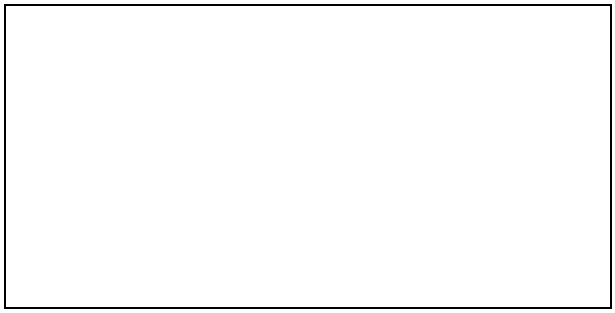
Work on electrical equipment

With the machine at a standstill, set the main switch or the safety switch to the “off” position and secure the switch with a lock.

Only electrical technicians are permitted to work at the machine with the main switch in the “on” position (for measurement and testing purposes).

To guarantee a correct operation sequence, do not manually actuate the sensors in normal mode.

External voltage

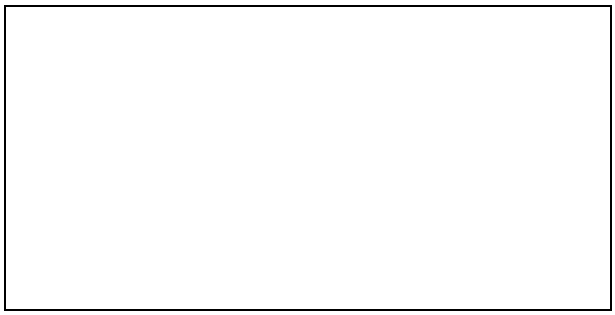


Certain circuits may still be live even with the main switch or safety switch in the “off” position.

These circuits are marked at the terminals (see diagram).

Particular care and attention is required in this area.

Supply line



The supply line to the main switch remains live, even if the main switch is in the “off” position.

The terminals of the supply line are marked (see diagram).

Particular care and attention is required in this area.

Discharge duration for frequency converters

When carrying out maintenance tasks at frequency converters, comply with the 10-minute wait requirement for discharge.

STO devices

STO stands for “safe torque off” and refers to safe stopping.

The guarantee of safety for STO devices expires after 15 years. The operating authority is responsible for replacing STO devices, whenever the respective guarantees of safety expire.

Safety circuit:

No modifications are permissible at the safety circuit. Safety-related components must not be removed or bridged.

Repair work at the safety circuit may only be carried out by qualified technicians. After finishing repair work at the safety circuit of at safety-related components, a test of the functioning of the safety circuit and the safety functions has to be performed for the entire machine. The function test procedure has to be set down in writing.

Safety-related components:

Safety circuit, cable harness, wiring, EMERGENCY STOP button, pull-wire, STO devices and other safety-related components of the machine

STO devices may only be repaired by a certified competent body such as “RIETER-ELO Service”.

Safe work environment

Risk of slipping and tripping:

Slippery surfaces and trip hazards can lead to serious accidents.

Keep aisles, handles, steps, ladders, platforms and railings free of grease, oil and other soilings.

Do not use the machine as a climbing aid or as a means of support. Use only the steps and platforms provided.

Wear anti-slip safety shoes.

Safety markings

The safety of persons will be compromised if safety markings are not discernible.

Replace markings that are not discernible.

Do not remove or cover safety markings.

Auxiliary aids and tools

Auxiliary aids such as ladders, lifting devices, etc. must be in perfect condition.

Tools and other auxiliary aids must not be deposited on machines that are running.

When using chemicals such as solvents, observe the instructions of the manufacturer.

Max. weight for manual handling

A max. weight of 25 kg for regular handling is specified in EN 1005-2.

If the weight of a subassembly exceeds 25 kg, use two persons or lifting equipment for handling purposes

Work at buildings and installations

If, for example, work is to be carried out above the machine, ensure that the machine is stopped beforehand.

Fire protection

With textile processes, fires can occur.

Ignition of fibres, fly or fibre dust, contact between cotton and heated bearings, sparks flying from metallic impurities and electrically-generated sparks can all lead to fires.

Provide manually-operated extinguishing systems, etc. for fire-fighting purposes.

Instruct personnel in the correct handling of extinguishing systems, use of escape routes, etc.

Determine the extinguishing systems to use in consultation with the local fire-protection authorities.

Disposal

If the machine is to be shut down for good, the legal requirements for re-use and recycling which hold in the respective country are to be complied with.

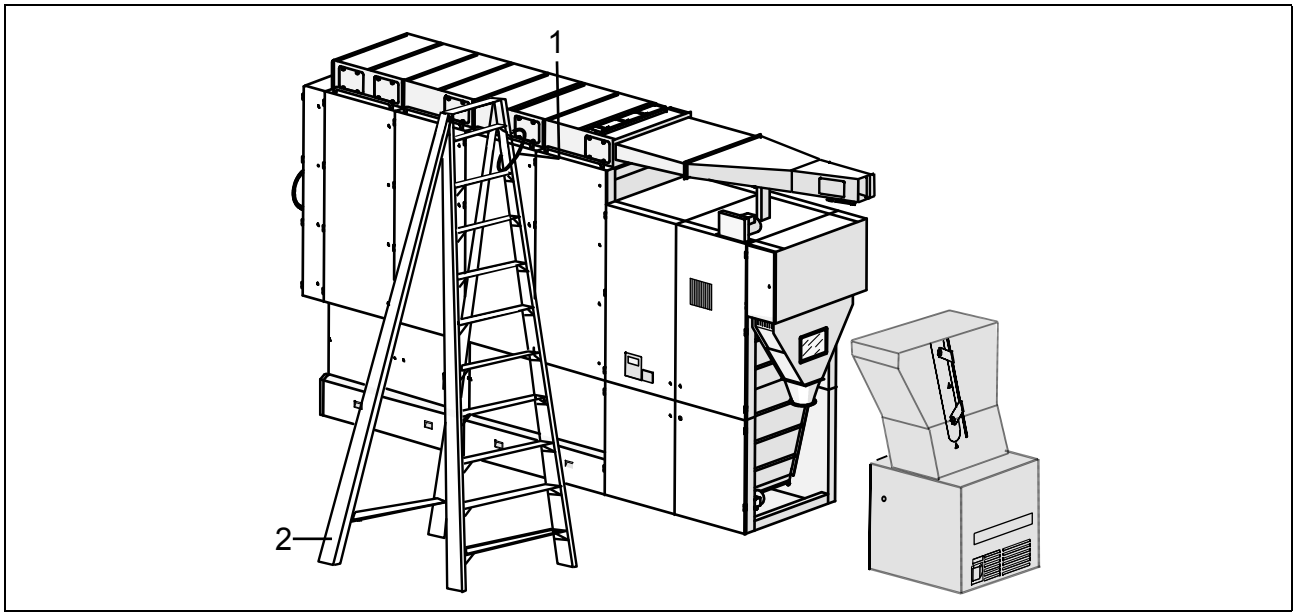
The operating authority is responsible for the proper disposal of operating media, such as oils, greases and batteries.

3.2 Safety devices

3.2.1 Secure the ladder

DANGER
Entry to the hazard zone is strictly forbidden!

If working on the UNImix using the accompanying or another ladder, the ladder must be secured using a safety lanyard. When this is done the ladder is prevented from accidentally tipping over. Do not step onto the machine.

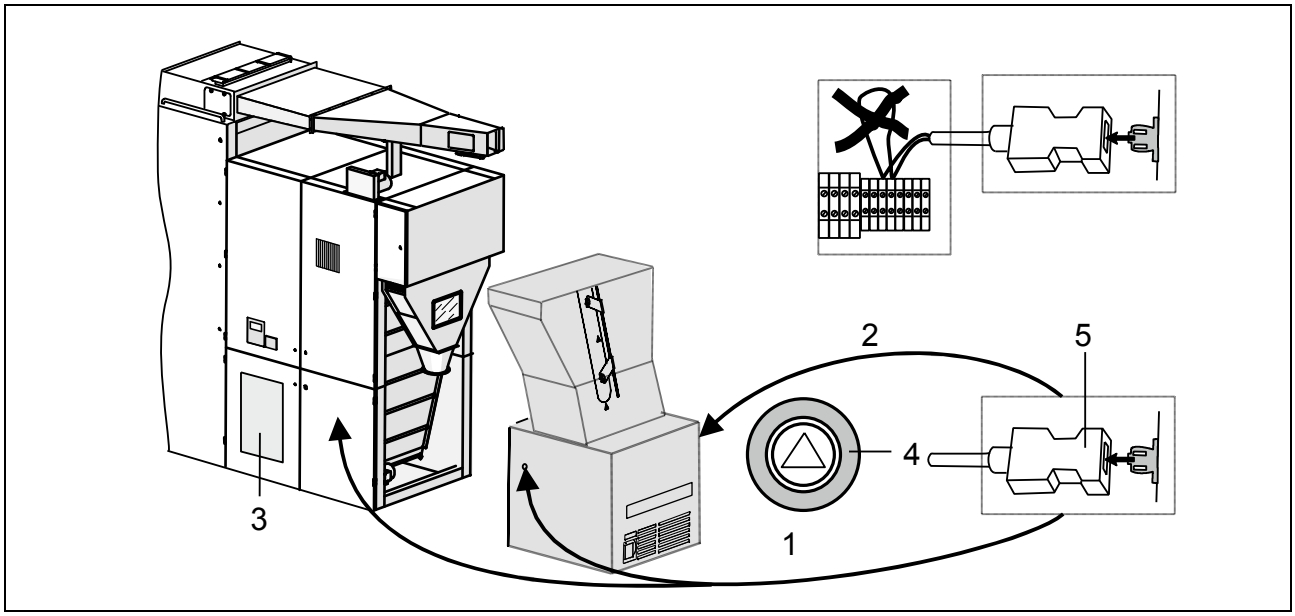


1 Safety lanyard

2 Ladder

3.2.2 Secured doors and covers

The two front covers at the bottom are secured with safety switches and each is identified by a red ring attached to the bolt. If such a cover is opened, the machine will be deactivated. The door at the cleaning port for accessing the interior space is secured with a limit switch. When the door is open, the machine is secured against starting.



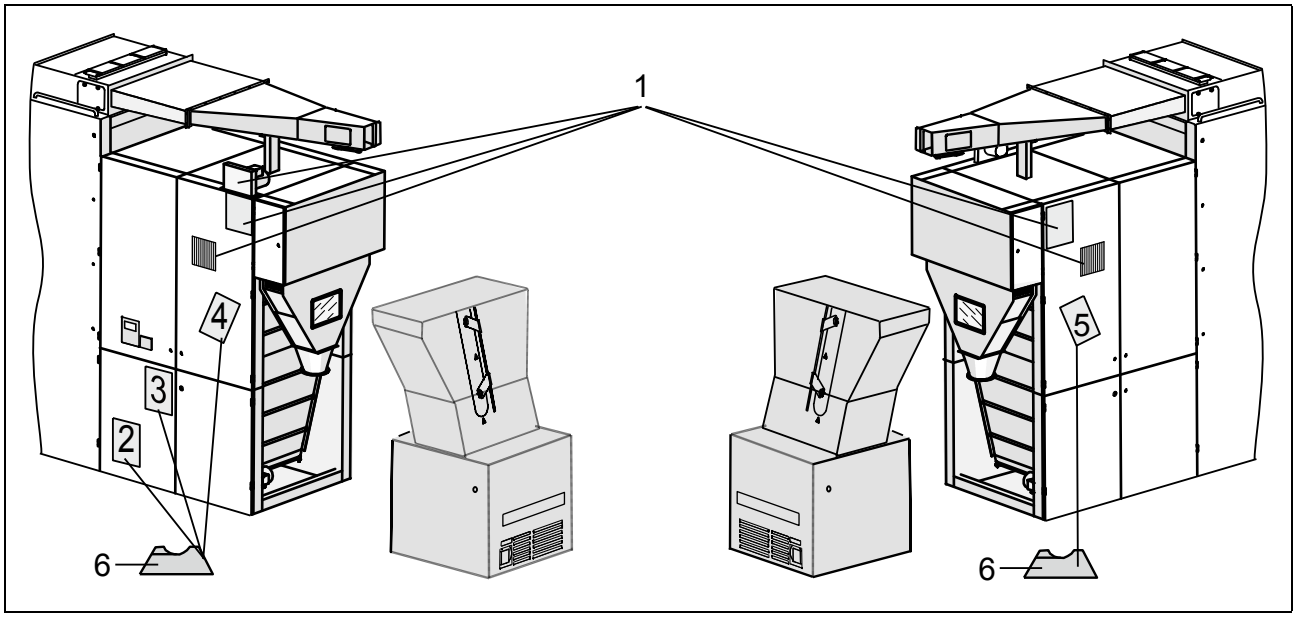
1 Doors, left-hand side
2 Doors, right-hand side
3 Cleaning port
4 Red ring
5 Safety switch

3.2.3 Bolted or non-fused covers

WARNING
Set the main switch to the “off” position and secure it with a lock.

WARNING
Moving machine parts.
The machine may only be put into operation, if all the covers are fitted.

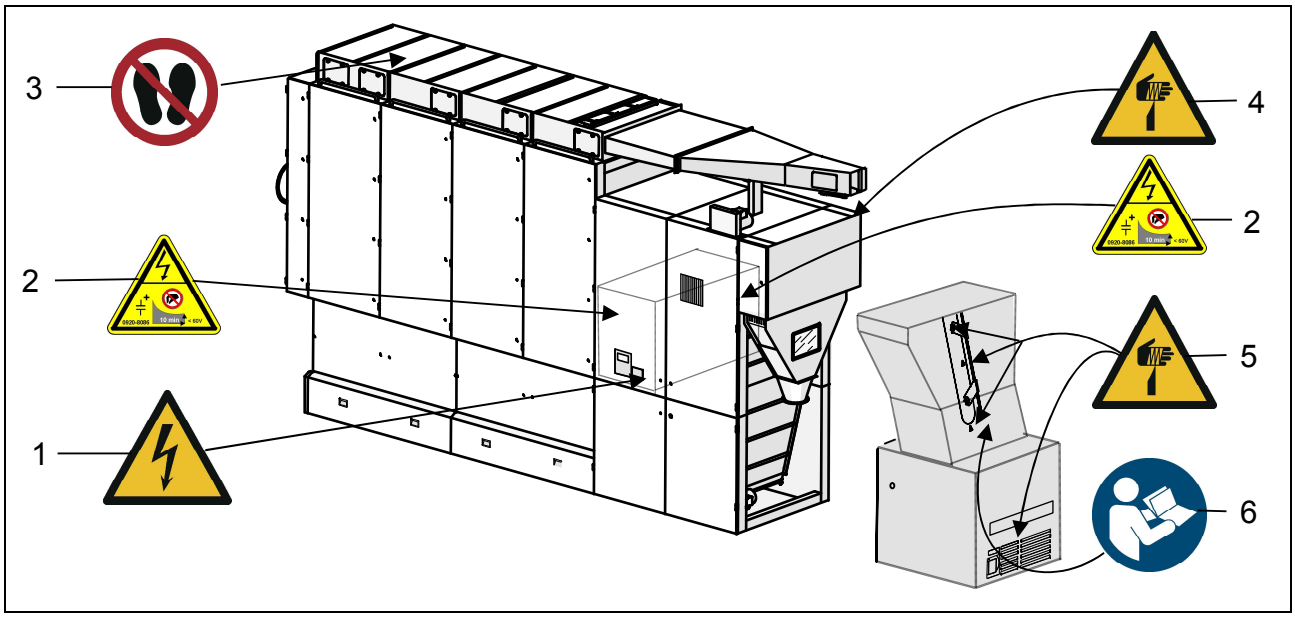
Tightly screwed-on covers and windows may only be removed if the main switch is set to the “off” position and secured. The covers prevent persons inadvertently reaching inside the drive units. If such covers are removed for servicing work, then they have to be refitted immediately upon completion of the work. The safety screws (6) for the windows (2 to 5) can only be loosened using a chisel. If, due to an emergency, the safety screws (6) are removed with a chisel, they are to be replaced later.



1 Screwed-on covers
2 - 5 Windows secured with safety screws
6 Safety screws

3.2.4 Warning sign

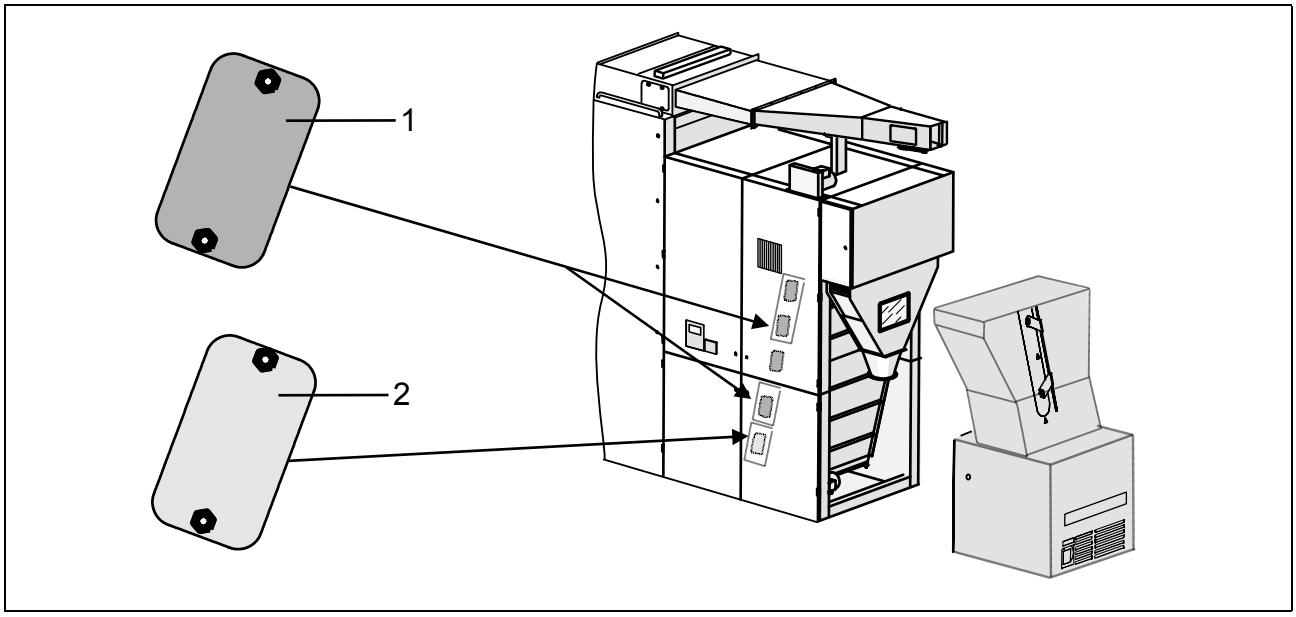
The warning signs and yellow markings indicate a hazard zone. If work is carried out incorrectly at such places, there is an increased risk of injury. Damaged or missing warning signs are to be replaced immediately.



1 *Warning signs: On control cabinet doors (left and right)*
2 *Warning signs: At control-cabinet frequency converters*
3 *Prohibition signs: At machine*
4 *Warning sign: On cover at drive unit for spiked lattice*
5 *Warning signs: On windows of R/S module (left and right)*
6 *Mandatory sign: At R/S module (see operating manual)*

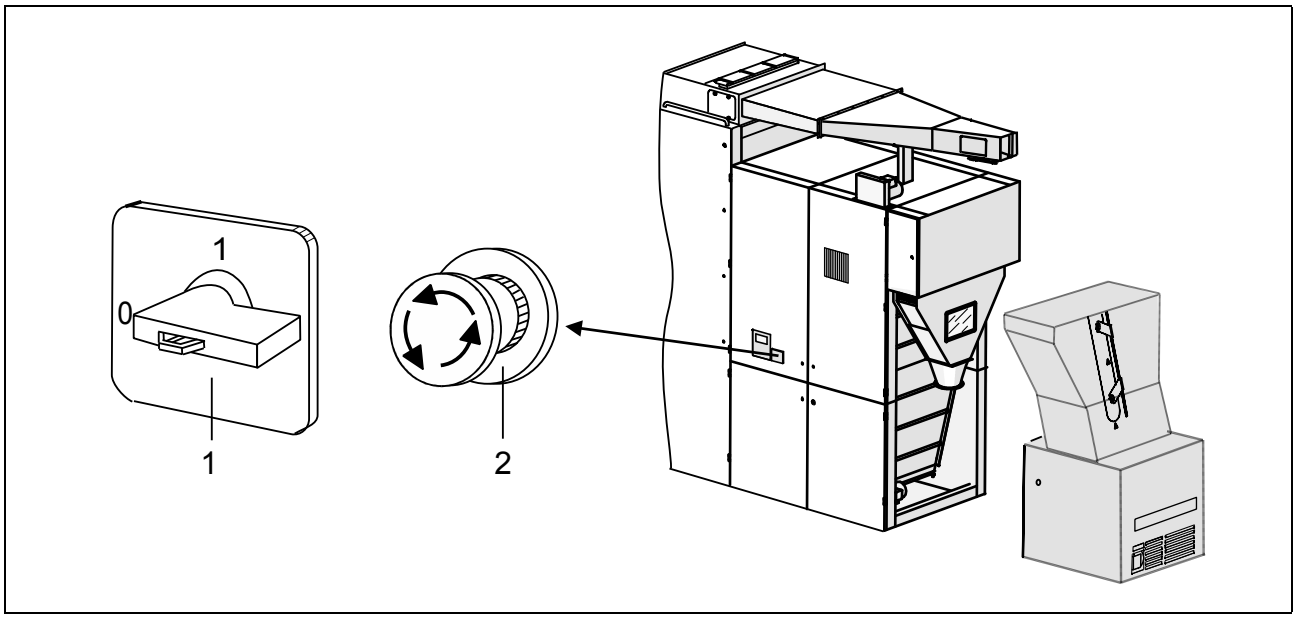
3.2.5 Covers for the openings near the spiked lattice

The covers for the openings may need to be removed for cleaning work. These covers may be removed only when the main switch is in the “off” position and secured with a lock. Before removing the lock on the main switch, the covers have to be re-fitted.



1 Steel covers
2 Plastic covers

3.2.6 Controls with safety function



1 ☞ *Main switch, Page 2/8*
2 ☞ *EMERGENCY SHUT-DOWN button, Page 2/9*

3.3 Responsibilities and qualifications

Responsibilities

By clear rules defining who is responsible for what, the customer creates optimum requirements for ensuring safety in the plant.

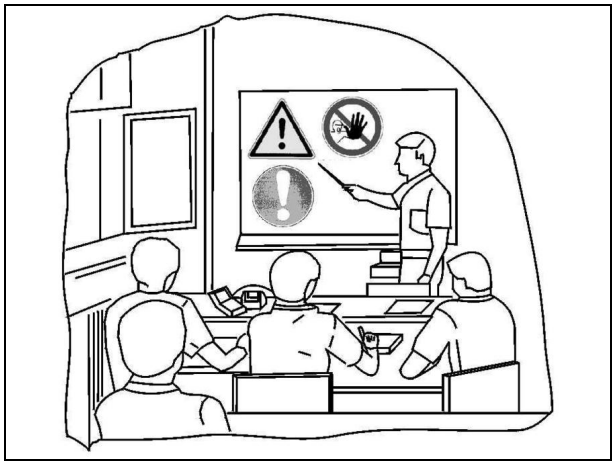
The areas of responsibility for each authorized person must be officially laid down.This applies in particular to jobs involving setting and servicing mechanical, electric and pneumatic devices.

This guarantees that unauthorized persons do not have access to the machines.

Visitors may enter machine rooms only if accompanied by an authoirzed person..

It must be made clear to visitors that machines are a potential source of danger when running.

Training



Inadequately trained staff may cause accidents. This may also result in injury to others.

Operating and maintenance staff must be given theoretical and practical training.

This is the general purpose of this part of the instructions. The corresponding operating information in the instructions refers to specific dangers and must always be observed.

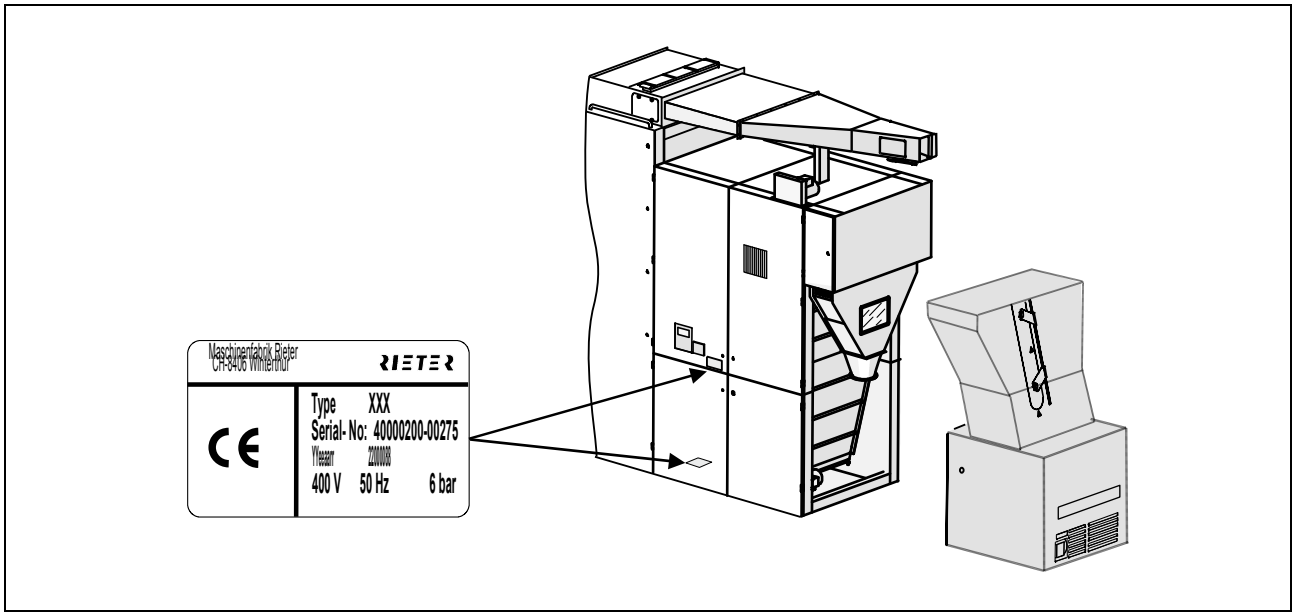
If well-trained personnel are in charge of machines, then these will produce a higher yield and a better quality, and there will be fewer faults, higher output and fewer injuries.

4 Machine identification

Manufacturer
Maschinenfabrik Rieter AG
Klosterstrasse 20
CH-8406 Winterthur

Tel. no.: +41 52 208 71 71
Fax: +41 52 208 83 20

4.1 CE nameplate

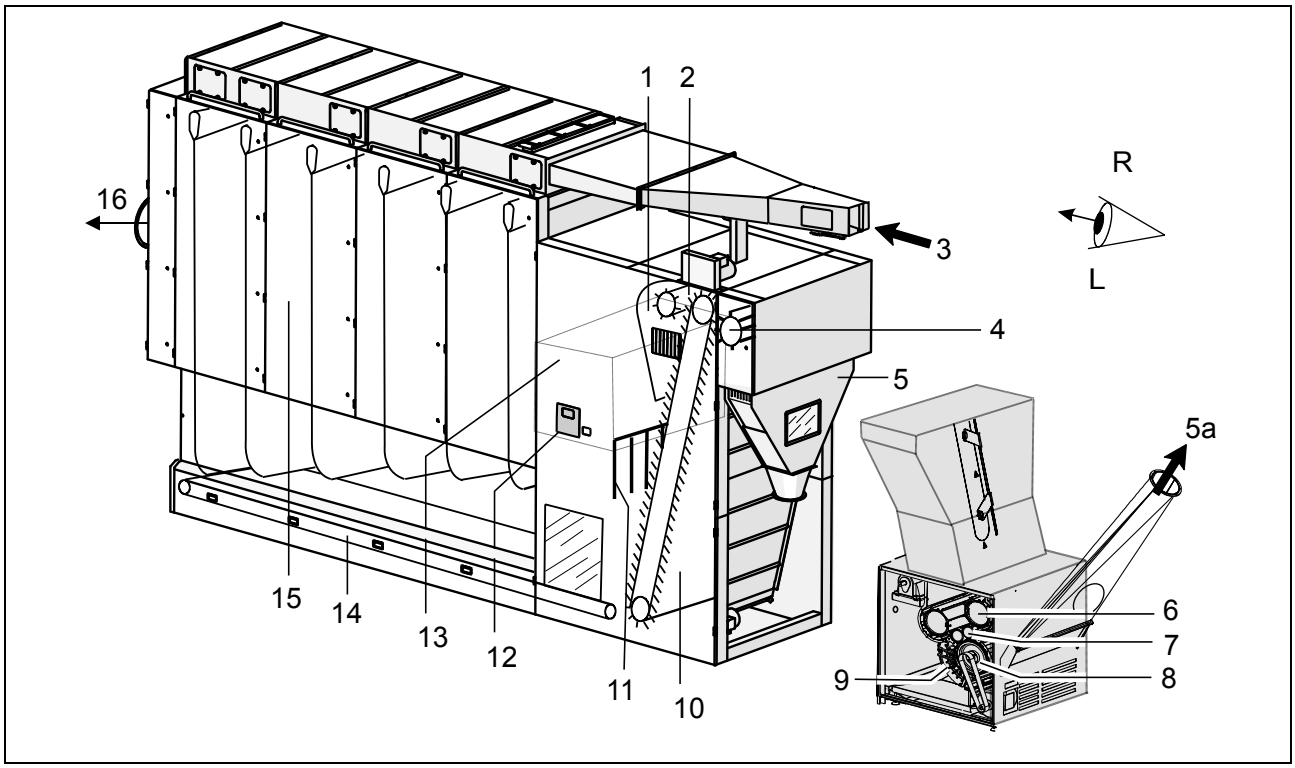


-	*Machine type*	*Specifies the exact type*	*xxx*	*V*	*Voltage specification*
-	*Serial no.*	*Every machine has a unique serial number.*	*xx*	*Hz*	*Mains frequency*
			x	*bar*	*Compressed air requirement*
-	*Year*	*It shows the year the machine was delivered.*			

When ordering spare parts, the nameplate information must be indicated on the order form.The second nameplate can be found behind the door.

5 Machine description

5.1 Overview of subassemblies



1 Dynamic storage
2 Opening roller
3 Material inlet with distributor flap
4 Take-off roller
5 Material inlet (without R/S module)
5a Material inlet (for R/S module)
6 Compression rollers
7 Feed rollers
8 Opening roller
9a Grating for R (cleaning)
9b Solid plate for S (synthetic fibres).
10 Spike lattice
11 Stripper rake
12 Operating unit
13 Electro cabinet
14 Conveyor belt
15 Storage with 8 chambers
16 Exhaust air
L/R The right and left side of the machine is determined by viewing it from the material delivery end.

6 Specifications

6.1 Performance characteristics

Use

Processing of textile raw materials	This machine is constructed exclusively for processing textile raw materials.

Raw material

Cotton	Cotton of all provenience.
Man-made fibres	Man-made fibers: Natural and synthetic polymers.

Fiber length

Maximum fibre length	max. 65.0 mm

B 76 R/S: Cotton production

Production while the opening roll runs in synchronism with the upright lattice.	max. 1000.0 kg/h
For waste mixtures, where the proportion of noils or waste exceeds 40%.	max. 800.0 kg/h

B 76 R/S: Man-made fibre production

Production while the opening roll runs in synchronism with the upright lattice.	max. 1000.0 kg/h

Opening roll speeds

Opening roll speed running in synchronism	575 min^{-1} (min. 500, max. 610)
Opening roll speed running in counter-rotation	70 - 150 min^{-1}

Take-off roller

Take-off roll speed	max. 612 min^{-1}

Spike lattice

Upright lattice speed	23.8 - 120.9 m / min.

Conveyor belt

Speed of conveyor belt	0.06 - 1.22 m / min.

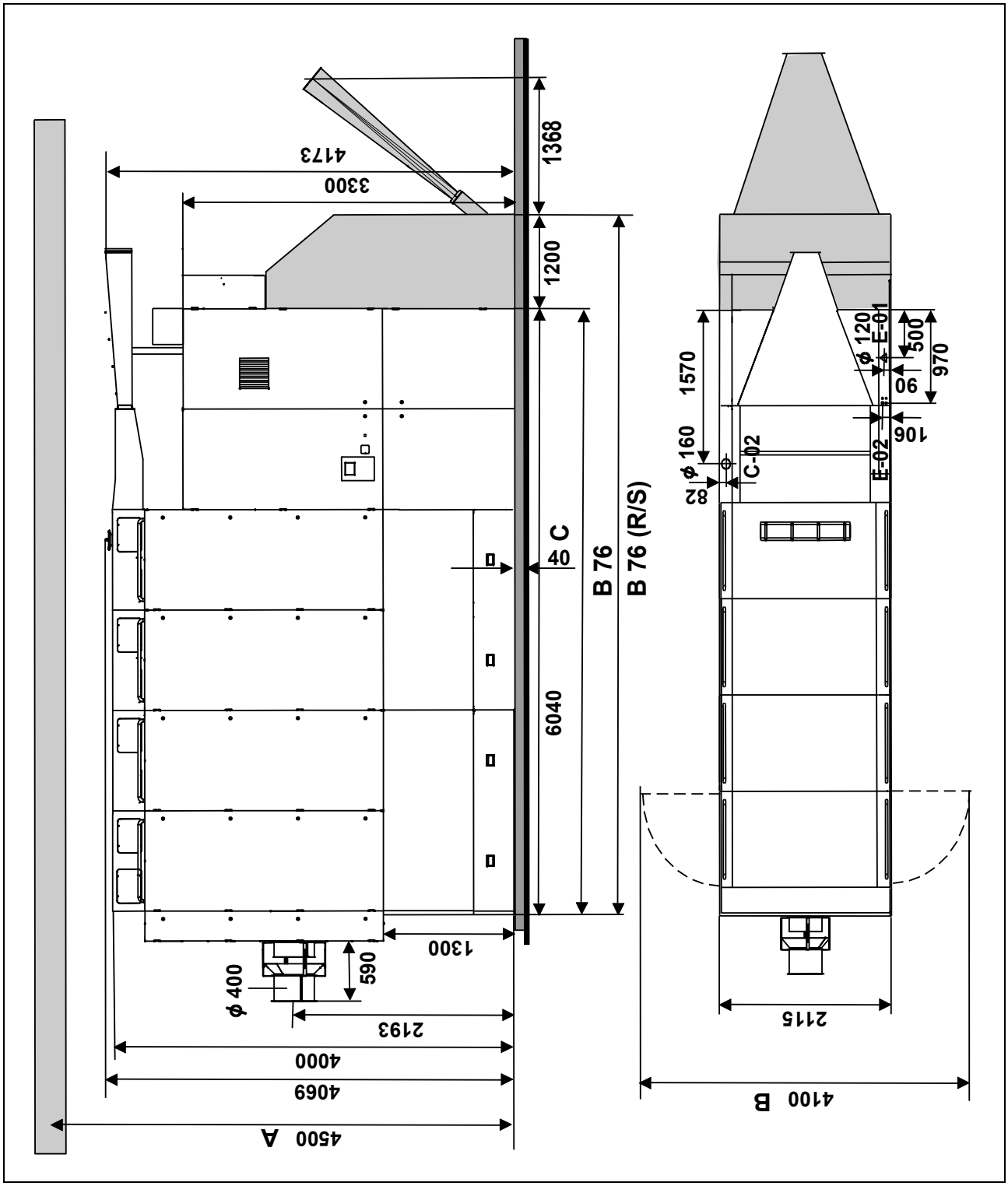
Opening roller

Speed of the opening roller	500 - 1000 min^{-1}

- Opening roller of the R/S module: (Alternative):
  Version used for cotton: Grating with mote knives in the vicinity of the opening roller.
  Version used for man-made fibres: Solid guide plate (instead of grating and mote knives) in the vicinity of the opening roller.
- Mote-knife settings for the R/S module: (Alternative):
  Manual procedure: Settings made without using programmed parameters.
  Using VarioSet: Settings made using programmed parameters.

6.2 Dimensions

6.2.1 Space requirements for the B 76 and B 76 R/S



Location number	Designation	Prerequisite	Dimension
A	Minimum Room Height (For installation and monitoring.)		see Plan mm (min. 4500)
B	Max. width with open doors		3498 mm
C	Level uniformity per running meter	Ground clearance: approx. 40 mm	+/- 3.00 mm /m
C-02	Extraction under upright lattice upwards		see Plan
Minimum distance	Minimum distance from one side of the machine to a wall or to the next machine.		min. 1200 mm
E-01	Electrical hook-up, bottom.		see Plan
E-02	Electrical hook-up, top.		see Plan

6.3 Weights

Designation	Prerequisite	Weights
Storage part complete	B 76	Approx. 2500 kg

Designation	Prerequisite	Weights
Delivery section	B 76	Approx. 2500 kg

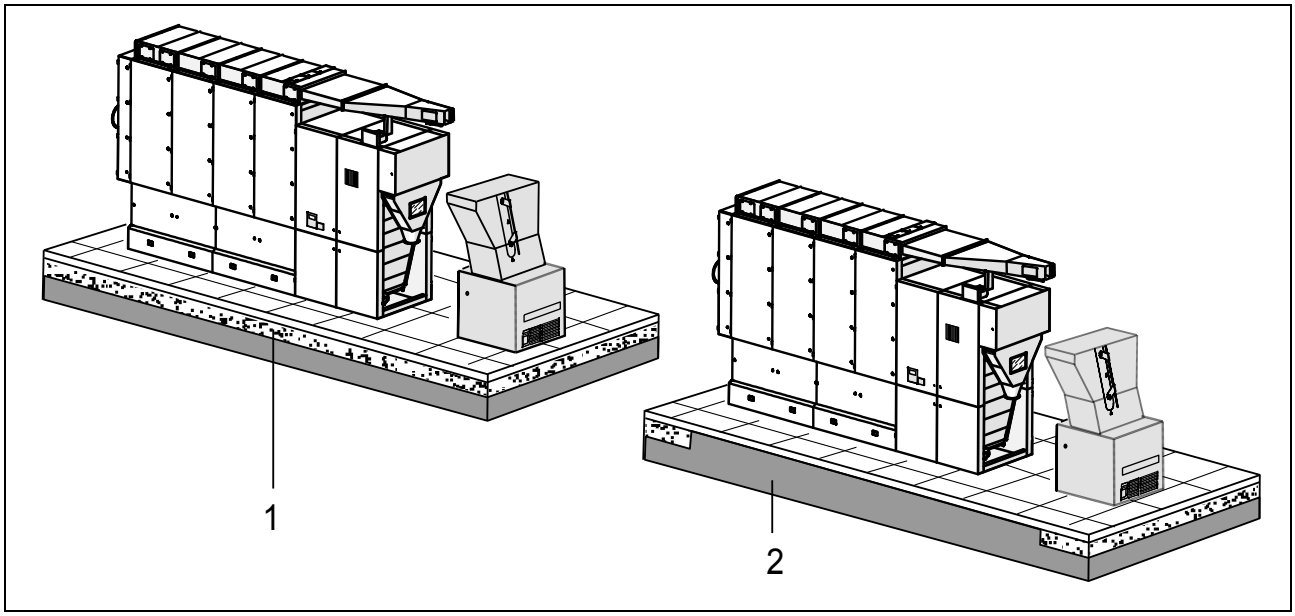
Designation	Prerequisite	Weights
Take-off section	B 76	Approx. 300 kg

Designation	Prerequisite	Weights
R/S module	B 72 R/S	Approx. 2000 kg

Designation	Prerequisite	Weights
Total weight	B 76	Approx. 5300 kg

Designation	Prerequisite	Weights
Total weight	B 72 R/S	Approx. 7300 kg

6.4 Floor condition



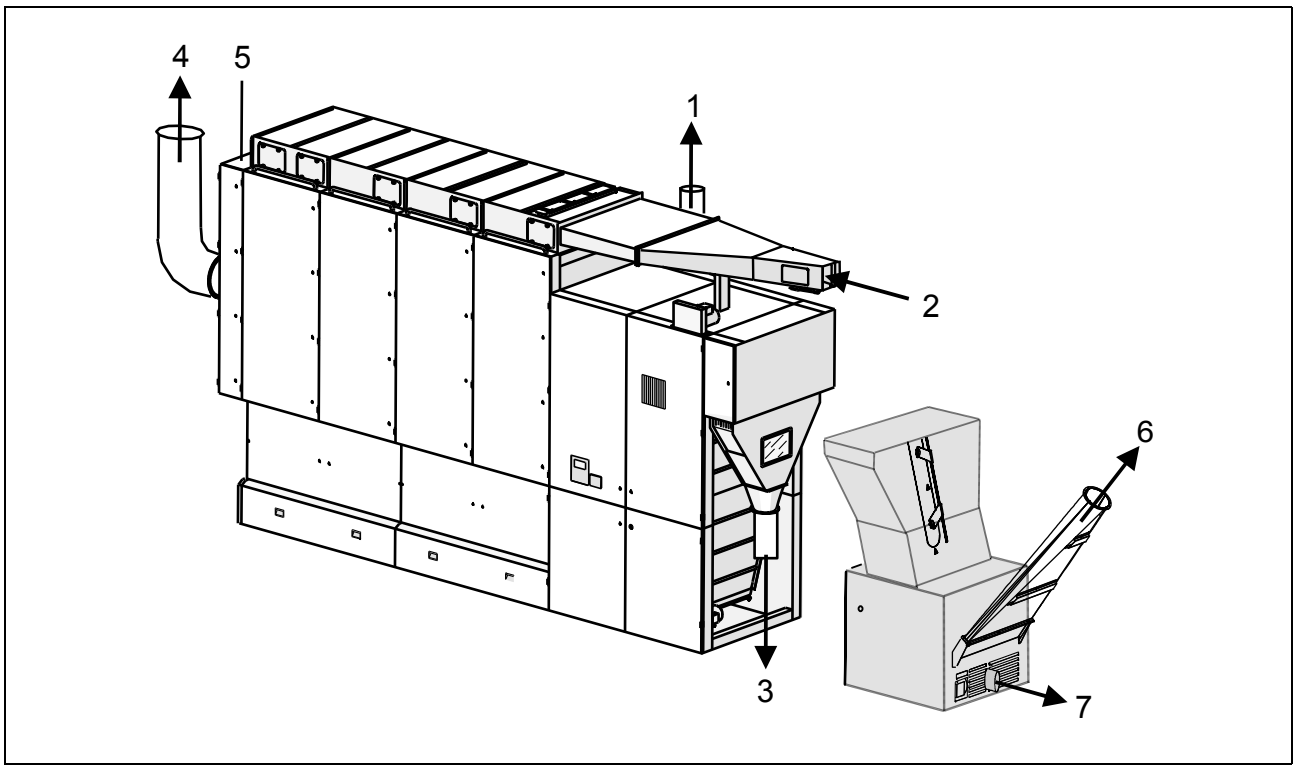
1 Intermediate bearings: Floors that are laid on sand or asphalt are not allowed.

2 Such intermediate supports in the region of the foot plate should be replaced with concrete to avoid the individual subassemblies from sinking.

6.5 Machinery requirements

6.5.1 Air ratio

Air ratio



Exhaust system under upright lattice (1)	0.50 m³/s
Material entry (2)	1.10 - 1.30 m³/s
Material outlet (3), 220-mm pipe diameter	0.60 - 0.90 m³/s
Exhaust air (4)	Approx. 1.20 m³/s
Static overpressure in the exhaust air chamber (5)	+ 20 - + 40 Pa
R/S module: Material outlet (6), 220-mm pipe diameter	0.50 - 0.70 m³/s
R/S module: Vacuum for waste disposal system (7)	min. 1000 Pa
R/S module: Air flow rate for waste disposal system (7)	min. 0.5 m³/s

6.5.2 Electrical data

Mains connection

Should the supply voltage not be within the specified range, a transformer has to be used to ensure stable conditions.	3x 400 V +/- 10%

Installed electrical power

Machine-specific data	See the diagram provided

6.6 Emissions

6.6.1 Statement of Noise Emission pursuant to ISO 4871

Declared noise emissions level assessed as A (reference pressure 1 pW) LWad

Spike lattice: max. 89.5 m / min.	< 70 + 3 dB

Measurement standard: ISO 9902 measurement standard; measuring distance: 1 m; levels expressed in the form: Lm + K Lm; typical mean value for K is 3 dB: safety margin. General conditions: Without material

Declared noise emissions level at the workstation(reference pressure 20 µPa) LpAd

Spike lattice: max. 89.5 m / min.	< 70 + 3 dB

Measurement standard: ISO 9902 measurement standard; measuring distance: 1 m; levels expressed in the form: Lm + K Lm; typical mean value for K is 3 dB: safety margin. General conditions: With material

7 Putting into operation

7.1 Commissioning

Machines manufactured by "Rieter Textile Systems" must always be assembled and commissioned by Rieter's own staff.
Should the assembly of new or existing plant be carried out by a third party, however, RIETER MACHINE WORKS LTD. declines all liability.

7.2 Decommissioning

Put the machine into a safe state.
disconnect the power supply.

Protect the machine from misuse.
Secure the machine in such a way that when it is idle there is no risk of injury to any person.

The machine-specific regulations with regard to decommissioning must be observed.

The machine must be suitably protected against soiling and corrosion.

The regulations and operating procedures specific to the machine are listed in the Chapter "Taking out of service" in Part 3. These regulations, and particularly the safety regulations, must be adhered to most exactly.

7.3 Putting back into operation

All elements affecting safety must be tested to ensure that they are in perfect operating condition.

The machine-specific regulations with regard to re-commissioning must be observed.

The regulations and operating procedures specific to the machine are listed in the Chapter "Putting back into service" in Part 3. These regulations, and particularly the safety regulations, must be adhered to most exactly.

7.4 Disposal

Disposal

In the case of the machine being conclusively removed from operation, the legal regulations of the relevant country should be observed.

This applies in particular to:

Re-usability

Recycling

Waste disposal

It must be ensured that the fuel remaining in the machine is disposed of in accordance with regulations.

Fuel such as oils, grease and batteries.

The regulations and operating procedures specific to the machine are listed in the Chapter "Disposal" in Part 3. These regulations, and particularly the safety regulations, must be adhered to most exactly.

8 Instruction of personnel

Safety advice for anybody using the machine.

— Safety devices
- ☞ General notes on safety, Page 1/9
- ☞ Secure the ladder, Page 1/14
- ☞ Warning sign, Page 1/17
- ☞ Secured doors and covers, Page 1/15
- ☞ Bolted or non-fused covers, Page 1/16
- ☞ Warning sign, Page 1/17
- ☞ Controls with safety function, Page 1/18

Operation guidelines for anybody involved with the machine.

— Operation functions
- ☞ Switching on main switch Q10, Page 2/21
- ☞ Switching off the main switch., Page 2/21
- ☞ Switch OFF the main switch and secure, Page 2/21
- ☞ Starting the machine, Page 2/23, 2/25
- ☞ Stop machine, Page 2/23, 2/25
- ☞ Change the language, Page 2/28
- ☞ How to acknowledge a malfunction., Page 2/28
- ☞ Enter password, Page 2/30
- ☞ Cancelling the password authorisation, Page 2/32
- ☞ Displaying an individual data screen, Page 2/33
- ☞ Navigating to a desired data screen with one key, Page 2/33
- ☞ Display the last data screen again, Page 2/33
- ☞ Display the last data screen again, Page 2/33
- ☞ Browsing in the same masks, Page 2/34
- ☞ Display main mask, Page 2/34
- ☞ Changing values/settings in data screens, Page 2/35
- ☞ Browsing lists, Page 2/35
- ☞ Changing from standard time to summer time , Page 2/36
- ☞ Sensor testing and display of I/O status via signal lamp, Page 2/36
- ☞ Performing service functions, Page 2/37

Machine setup

— Setup, changeover, adjustments
- ☞ Production is not reached, Page 3/3
- ☞ Material transport in the storage area, Page 3/4
- ☞ Open transfer, Page 3/5
- ☞ Delivery section, Page 3/6
- ☞ Replacing the operating unit (including the control unit), Page 3/9

Description of the settings

— Subassemblies
  - ☞ Tension conveyor belt, Page 6/19
  - ☞ Aligning the conveyor belt, Page 6/20
  - ☞ Tightening the chain, Page 6/22
  - ☞ Adjusting the distance between the conveyor belt and the spiked lattice (standard setting), Page 6/21
  - ☞ Adjust the pressure sensor, Page 6/25
  - ☞ Adjust the separating vanes, Page 6/27
  - ☞ Exhaust air, Page 6/28
  - ☞ Adjust the stripper rake, Page 6/31
  - ☞ Tension the spike lattice, Page 6/37
  - ☞ Position of the opening roller to the spiked lattice (standard setting), Page 6/43
  - ☞ Tighten the V-belt, Page 6/46
  - ☞ Distance of the Take-off Roller to the Spike Lattice, Page 6/48
  - ☞ Tighten the V-belt, Page 6/49

Description of the troubleshooting process

— Always consult part 5 of the operating manual in the event of a malfunction.

Description of the maintenance work

— Go over the maintenance and lubrication schedules of part 4 with maintenance staff and mechanics

Explanation on how to handle the electronic documentation (e-DOC)

— Navigating through the e-DOC program

- ☞ Navigating through the e-DOC (electronic documentation) program , Page 2/38
- ☞ Opening e-DOC , Page 2/39
- ☞ Selecting the language and accepting the licence agreement, Page 2/39
- ☞ Opening the home page , Page 2/39
- ☞ Opening the “Settings” menu and entering data , Page 2/40
- ☞ Entering ordering address , Page 2/41
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- ☞ Selecting spare parts for sub-assemblies , Page 2/44
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Part 2

Operation

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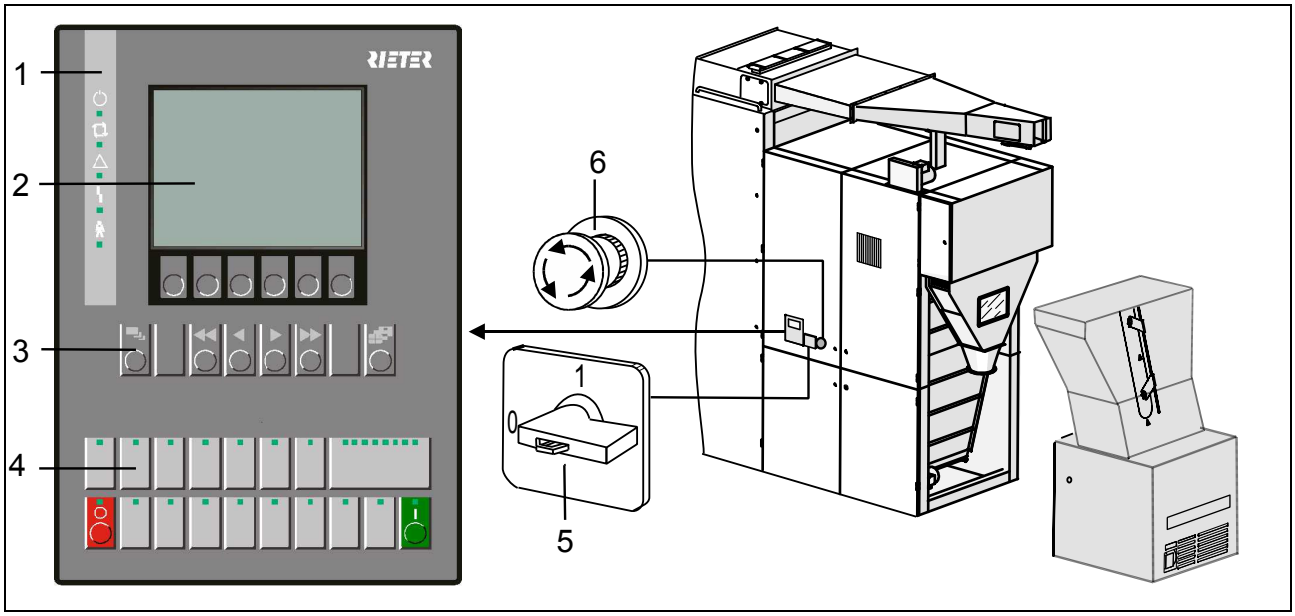
1 Controls and display elements

1.1 Overview of controls and display elements

1.1.1 Operating unit and machine



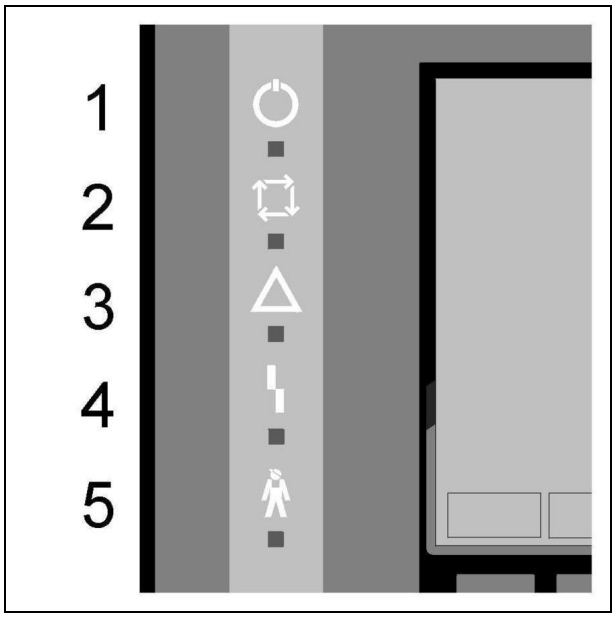
1	*LED status display*	*6*	☞ *EMERGENCY SHUT-DOWN button, Page 2/9*
2	*Functions of the program keys*		
3	*Control keys*	*8*	*LED's for CPU status on the basic module of the control system*
4	*Keyboard and machine keys*		
5	☞ *Main switch, Page 2/8*		

The operator interface panel is the interface between the operator and the machine control system.

All the functions of machine operation are available with the operational controls and displays on the operator panel.

The surface of the operator panel consists of 4 segments.

1.1.1.1 LED status display



The state of the machine is shown by means of 5 LEDs

1 ☞ *LED electric power supply, Page 2/19*

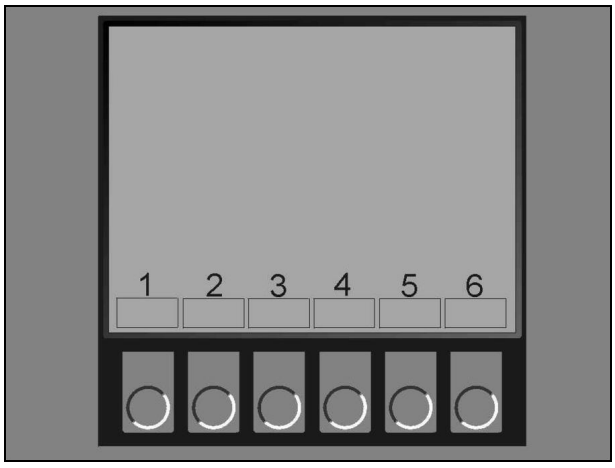
2 ☞ *LED automatic mode (production mode), Page 2/19*

3 ☞ *LED "Alert", Page 2/19*

4 ☞ *LED "Malfunction", Page 2/20*

5 ☞ *LED call "Service personnel", Page 2/20*

1.1.1.2 Functions of the program keys



The function of the program keys, immediately below the display unit, depends on the displayed screen.

Program keys are also known as soft keys.

For example, the function of the fourth program key is different in the basic screen from what it is in a data screen.

The corresponding symbol/icon above the key indicates the function.

1 30.2 ☞ *DIRECT key, forward, Page 2/9*

☞ *POINTER key back, Page 2/9*

✓ ☞ *ENTER-key, Page 2/9*

2 40.1 ☞ *DIRECT-key back, Page 2/10*

☞ *POINTER key forward, Page 2/10*

? ☞ *HELP-key, Page 2/10*

3 ☞ *MENU overview key, Page 2/10*

☞ *START OF LIST key, Page 2/10*

\- ☞ *MINUS-key, Page 2/10*

\- ↵ ☞ *MINUS-ENTER- key, Page 2/11*

4 ☞ *PASSWORD-INSERT key, Page 2/11*

☞ *PASSWORD-CANCELLING key, Page 2/11*

☞ *END OF LIST key, Page 2/11*

\+ ☞ *PLUS-key, Page 2/11*

\+ ↵ ☞ *PLUS-ENTER-key, Page 2/11*

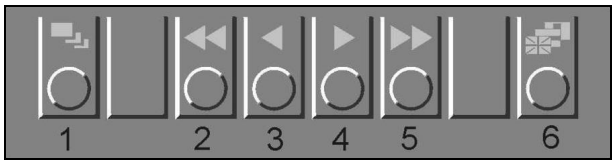
5 ☞ *SCREEN-key back, Page 2/12*

6 ☞ *SCREEN-key scroll forwards, Page 2/12*

↵ ☞ *ENTER-key, Page 2/12*

C ☞ *DELETE key, Page 2/12*

1.1.1.3 Control keys



The control keys enable you to navigate between the basic screens, the menu screen and the data screens.
Press the right-hand key to change the language on the display unit.

1 ☞ *BASIC display key, Page 2/13*

2 ☞ *MENU-key back, Page 2/13*

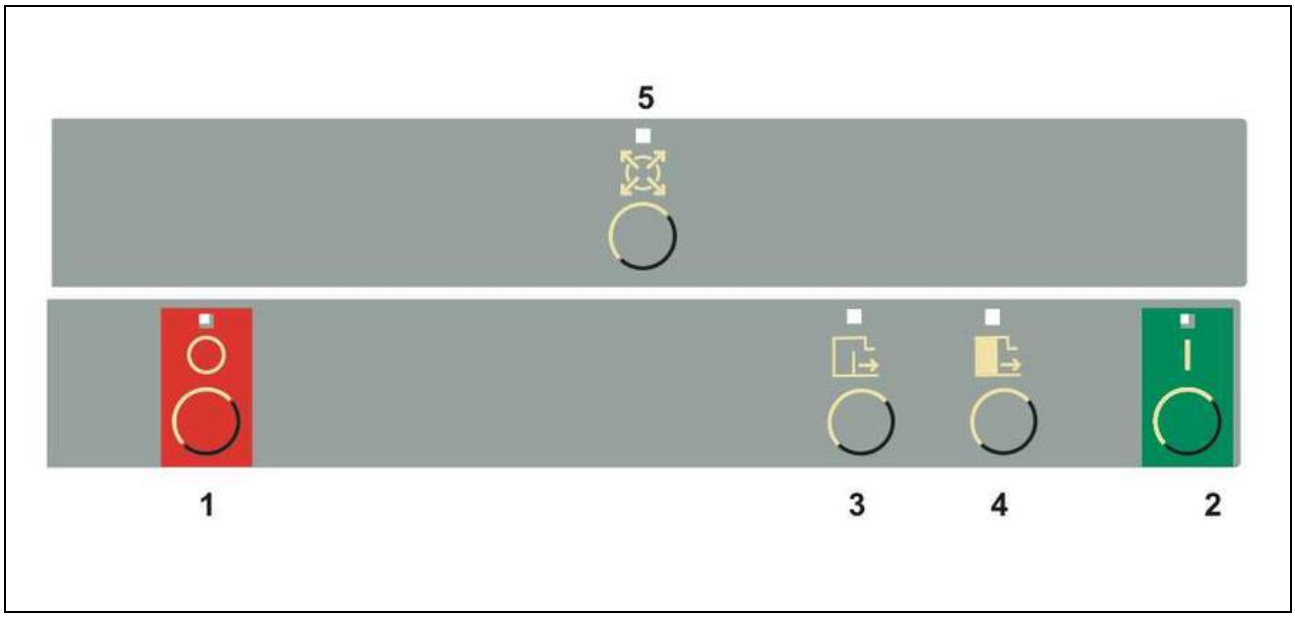
3 ☞ *DATA-DISPLAY-key-back, Page 2/13*

4 ☞ *DATA-DISPLAY-key-forward, Page 2/13*

5 ☞ *MENU-key forwards , Page 2/13*

6 ☞ *LANGUAGE-key, Page 2/14*

1.1.1.4 Keyboard and machine keys



1
☞ *STOP key on the operator panel, Page 2/14*

2
☞ *START key on the operator panel, Page 2/14*

3
☞ *“Empty machine” machine button, Page 2/14*

4
☞ *“Empty R/S module” machine button, Page 2/15*

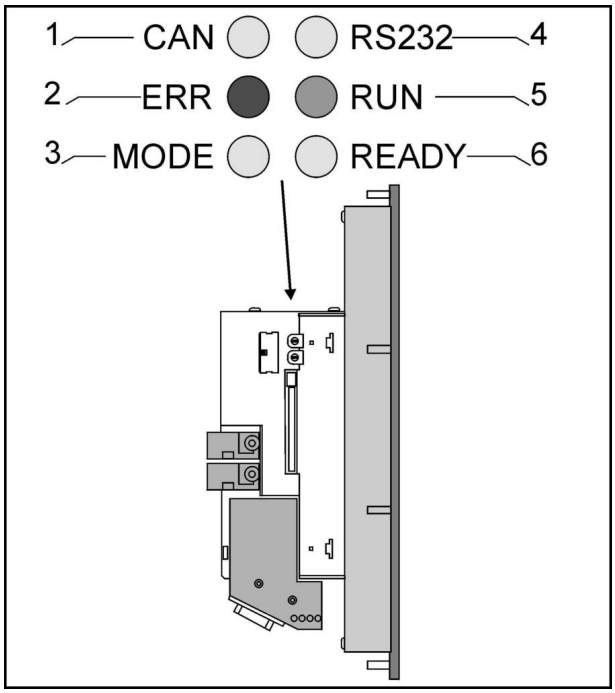
5
☞ *Machine key "destress", Page 2/15*

The machine keys enable you to operate the basic functions of the machine.

If a function is triggered via a machine key, the corresponding LED flashes while the function is being performed.

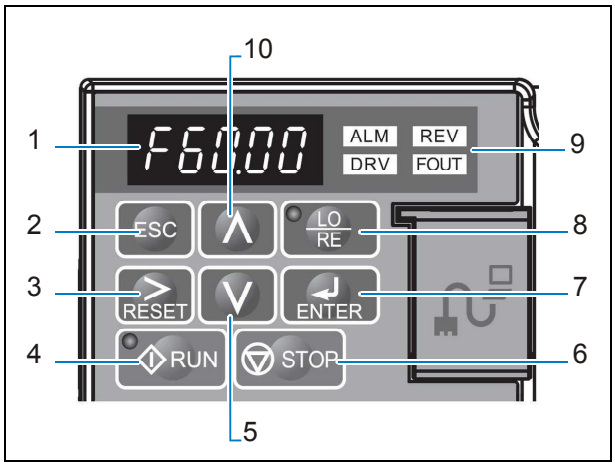
Otherwise the LED remains lit up as long as the key remains depressed, but for at least 2 seconds.

1.1.1.5 LED's for CPU status on the basic module of the control system



- ☞ *CPU status, display on the basic module of the control unit, Page 2/20*

1.1.2 T1000V frequency converter, operating unit



1 F60.00 ☞ *Data display, frequency converter, Page 2/16*

2 ESC ☞ *ESC key, frequency converter, Page 2/16*

3 RESET ☞ *RESET key, frequency converter, Page 2/16*

4 RUN ☞ *RUN key, frequency converter, Page 2/16*

☞ *RUN LED, frequency converter, Page 2/16*

5 ☞ *Down arrow key, frequency converter, Page 2/17*

6 STOP ☞ *STOP key, frequency converter, Page 2/17*

7 ENTER ☞ *ENTER key, frequency converter, Page 2/17*

8 LO RE ☞ *LOCAL/REMOTE key, frequency converter, Page 2/17*

☞ *LO-RE-LED, frequency converter, Page 2/17*

9 ALM ☞ *ALM LED, frequency converter, Page 2/17*

REV ☞ *REV LED, frequency converter, Page 2/18*

DRV ☞ *DRV LED, frequency converter, Page 2/18*

FOUT ☞ *FOUT LED, frequency converter, Page 2/18*

10 ☞ *Up arrow key, frequency converter, Page 2/18*

1.2 Operating elements

1.2.1 Operating unit and machine

1.2.1.1 Main switch

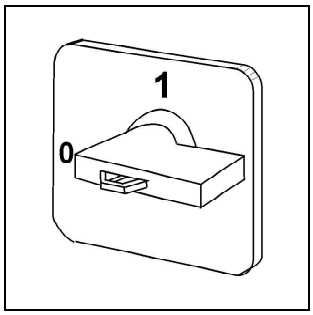
WARNING
When the main switch is set to the "on" position, elements downstream of the main switch are live.
Injury due to electric shock.
Prior to commencing electrical installation work, switch off the machine via the main switch and secure the switch with a padlock.
The main switch has to be turned off and secured to carry out the following tasks: Cleaning, repair, service, and work in the control cabinet.

WARNING
Elements subject to external voltage may still be live even with the main switch off.
Injury due to electric shock
Prior to commencing work, the elements that are subject to external voltage must be isolated.
This isolation procedure may only be carried out by a qualified electrician.

CAUTION
The machine will run down in an uncontrolled manner if the main switch is turned off during operation.
The machine may become damaged.
The main switch may be only operated with the machine at a standstill.

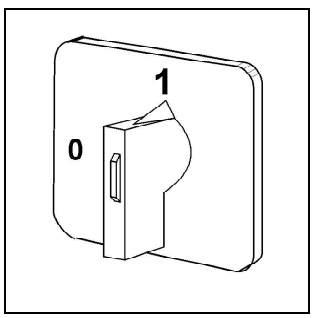
Description of function

Use the main switch to turn the operating power on and off.



Off, position "0"

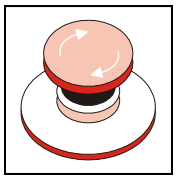
⟹ The machine is without power. The machine cannot be started.



On, position "1"

⟹ Operating position

1.2.1.2 EMERGENCY SHUT-DOWN button



Description of function

EMERGENCY SHUT-DOWN buttons are intended to be used in an emergency. When an EMERGENCY SHUT-DOWN button is actuated all drives are immediately shut down. This enables danger from moving machine parts to be avoided as quickly as possible.

Actuated

⟹ The machine is put into a safe state as quickly as possible.

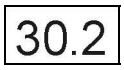
⟹ The machine cannot be started as long as the EMERGENCY SHUT-DOWN button is actuated.

Released

⟹ Operating conditions

1.2.2 Functions of the program keys

1.2.2.1 DIRECT key, forward



Description of function

Prerequisite: This key is not included in all control systems.

Use the "DIRECT next key" to go to the configured data screen. You can use the "DIRECT next key" to go directly to a frequently needed data screen. The data screen number indicates which screen the system will go to. The first program key is always assigned.

1.2.2.2 POINTER key back

Description of function

Use the "POINTER key back" to mark the previous menu in the menu-overview. The previous input or list field is marked in the data screen.

1.2.2.3 ENTER-key

Description of function

Prerequisite: This programming key does not appear on the display until the control system has ascertained that the malfunction has been remedied.

Use the "ACKNOWLEDGE-key" to acknowledge a message or a displayed malfunction.

1.2.2.4 DIRECT-key back

Description of function

Use the "DIRECT-key back" to jump from the basic screen to the data screen last shown. The occupancy is always on the second program key. After switching on the machine or when the last screen displayed can no longer be displayed, an empty box appears (no function).

1.2.2.5 POINTER key forward

Description of function

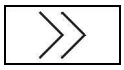
Use the POINTER key forward to mark the next menu in the menu-overview. The next input or list field is marked in the data screen.

1.2.2.6 HELP-key

Description of function

If there is context-sensitive help for a malfunction screen, it can be displayed by means of the "HELP-key".

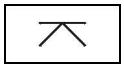
1.2.2.7 MENU overview key



Description of function

The "MENU overview key" is used to show the menu overview.

1.2.2.8 START OF LIST key



Description of function

Prerequisite: The LIST length exceeds the monitor screen length.

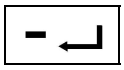
Use the “START OF LIST” key to jump to the start of the list.

1.2.2.9 MINUS-key

Description of function

Use the “MINUS” key to reduce the value. The text box, wherein changes are made, has a negative image. The changed value becomes active for the control system only after it has been confirmed by the "ENTER" key. For most setting values, the “MINUS” key only appears, if the correct password was previously entered.

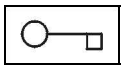
1.2.2.10 MINUS-ENTER-key



Description of function

Use the "MINUS-ENTER-key" to reduce and immediately save the value. The "MINUS-ENTER-key" is only shown with variable values which are accepted immediately. i.e. the transfer of the value need not be explicitly confirmed with the ENTER-key.

1.2.2.11 PASSWORD-INSERT key



Description of function

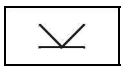
Use the "PASSWORD-INSERT-key" to display the first screen for entering the password.

1.2.2.12 PASSWORD-CANCELLING key

Description of function

Use the "PASSWORD-CANCELING-key" to cancel the active password authorization

1.2.2.13 END OF LIST key



Description of function

Prerequisite: The LIST length exceeds the monitor screen length.

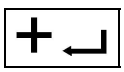
Use the “END OF LIST” key to jump to the end of the list.

1.2.2.14 PLUS-key

Description of function

Use the "PLUS" key to increase the value. The text box, wherein changes are made, has a negative image. The changed value becomes active for the control system only after it has been confirmed by the "ENTER" key. For most setting values, the “PLUS” key only appears, if the correct password was previously entered.

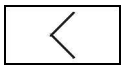
1.2.2.15 PLUS-ENTER-key



Description of function

Use the "PLUS-ENTER-key" to increase and immediately save the value. The PLUS-ENTER-key is only shown with variable values which are accepted immediately. i.e. the transfer of the value need not be explicitly confirmed with the ENTER-key.

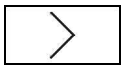
1.2.2.16 SCREEN-key back



Description of function

Use the "SCREEN-key back" to display the previous screen. These may be data screens, basic screens or malfunction screens. The menu-overview displays the last data screen of the preceding menu.

1.2.2.17 SCREEN-key scroll forwards



Description of function

Use the SCREEN-key forward to display the next screen. The menu-overview displays the first data screen of the menu.

1.2.2.18 ENTER-key

Description of function

Press the "ENTER-key" to accept the entry/change of value, i.e. the altered value is saved.

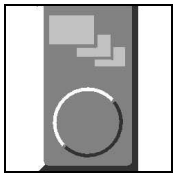
1.2.2.19 DELETE key

Description of function

Use the “DELETE” key to delete a changed entry. The previously stored value will be displayed again. This is not possible for keys where the chosen value is effective immediately.

1.2.3 Control keys

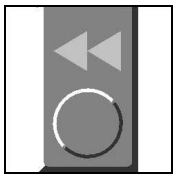
1.2.3.1 BASIC display key



Description of function

Use the "BASIC-DISPLAY-key" to jump from the menu screen or some data screen into the overview (standard basic screen or malfunction screen).

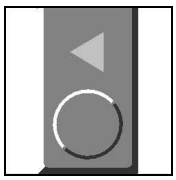
1.2.3.2 MENU-key back



Description of function

In the menu overview the "MENU-key back" marks the preceding line of the menu or displays the menus screen. After the first line of the menu the last line of the menu is displayed.

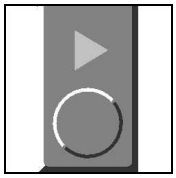
1.2.3.3 DATA-DISPLAY-key-back



Description of function

The "DATA-DISPLAY-key-backward" displays the previous data screen. After the first data screen the menu overview is displayed again.

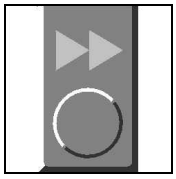
1.2.3.4 DATA-DISPLAY-key-forward



Description of function

The "DATA-DISPLAY-key-forward" displays the next data screen. After the last data screen the menu overview is displayed again.

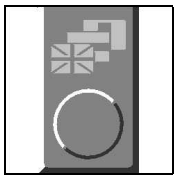
1.2.3.5 MENU-key forwards



Description of function

In the menu overview the MENU-key forwards“ marks the next line of the menu or displays the menu screen. After the last line of the menu, the first line of the menu is displayed.

1.2.3.6 LANGUAGE-key

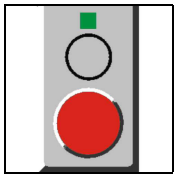


Description of function

Use the "LANGUAGE key" to go to the next configured language.

1.2.4 Keyboard and machine keys

1.2.4.1 STOP key on the operator panel

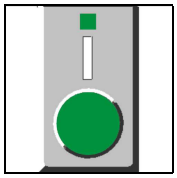


Identifying feature: Red

Description of function

The "STOP" key stops production mode or the currently active process.

1.2.4.2 START key on the operator panel

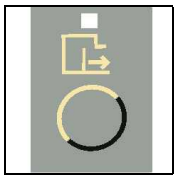


Identifying feature: Green

Description of function

The START key starts the production mode. If the machine cannot be started the cause is shown as an error message. In service mode the "START" key starts the currently selected function.

1.2.4.3 “Empty machine” machine button

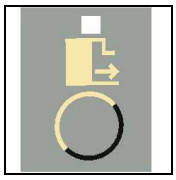


Description of function

Prerequisite: The emptying option can only be selected in automatic mode. The emptying process is not performed until the production mode is active.

No more material is being requested by the preceding machine. Normal production is continued. If the fill level falls below the minimum acceptable level, the feed fan is deactivated. In order to finish the emptying process, the button must be pressed a second time. The LED goes out and the UNImix continues with normal production.

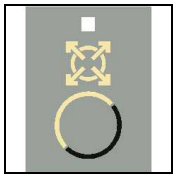
1.2.4.4 “Empty R/S module” machine button



Description of function

This button is used for emptying the module. Once the emptying process is activated, no more material is requested by the spiked lattice. If the light barrier associated with the minimum fill level of the R/S module responds, the machine remains active for a maximum of 5 minutes (pure running time). Subsequently, the compression rollers and feed rollers are deactivated and the machine adopts the “Empty” status. During the emptying process, the corresponding LED flashes.

1.2.4.5 Machine key "destress"



Description of function

The purpose of this function is to clear blockages. It can only be executed when the machine is in the “ready for operation” state. The function remains active, all the while the button is pressed. The associated LED remains lit, for as long as the button is pressed. With this function, the feed belt runs at a high speed, while the spiked lattice moves slowly in reverse. In the R/S module, the feed and compression rollers rotate at creep speed in the direction opposite to the “production” direction. As soon as the button is released, all drives stop.

1.2.5 T1000V frequency converter, operating unit

1.2.5.1 Data display, frequency converter

Identifying feature: Seven-segment display

Description of function

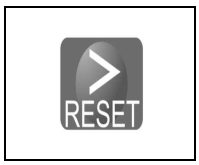
Indicates monitoring data, parameter numbers and settings.

1.2.5.2 ESC key, frequency converter

Description of function

Used to return to the previous menu.

1.2.5.3 RESET key, frequency converter



Description of function

Used to move the cursor to the right and to acknowledge a fault after it has been rectified.

1.2.5.4 RUN key, frequency converter

Description of function

Used to start frequency converter operation, given that the frequency is being controlled via the operating unit (local mode).

1.2.5.5 RUN LED, frequency converter

Description of function

The signals provided by the LED (and their interpretations) are as follows:

Lit

⟹ The motor is running.

Flashing

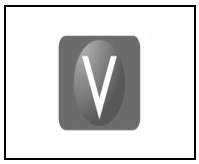
⟹ The speed is being reduced.

⟹ The reference value for the frequency is 0.

Rapid flashing

⟹ Drive is not active

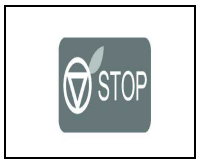
1.2.5.6 Down arrow key, frequency converter



Description of function

Used to move partial image down, move cursor down, and reduce values.

1.2.5.7 STOP key, frequency converter



Description of function

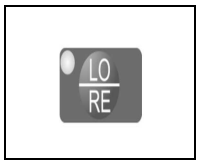
Used to stop frequency converter operation.

1.2.5.8 ENTER key, frequency converter

Description of function

Used to confirm and save adjusted values and parameter settings.

1.2.5.9 LOCAL/REMOTE key, frequency converter



Description of function

Used to switch between the control unit involving the operating unit (LOCAL) and the control terminals (REMOTE).

1.2.5.10 LO-RE-LED, frequency converter

Description of function

The signal provided by the LED (and its interpretation) is as follows:

Lit

⟹ The frequency converter is being controlled via the digital operating unit (local mode).

1.2.5.11 ALM LED, frequency converter

Description of function

The signals provided by the LED (and their interpretations) are as follows:

Flashing

⟹ The drive has the “Alarm” status

Lit

⟹ The drive has the “Fault” status

1.2.5.12 REV LED, frequency converter

REV

Description of function

The signals provided by the LED (and their interpretations) are as follows:

Lit

⟹ The motor runs in reverse.

Unlit

⟹ The motor runs forwards.

1.2.5.13 DRV LED, frequency converter

DRV

Description of function

The signals provided by the LED (and their interpretations) are as follows:

Lit

⟹ The drive is ready.

Unlit

⟹ The drive is in one of the following modes: “Verify”, “Setup”, “Parameter Setting”, “Auto”

1.2.5.14 FOUT LED, frequency converter

FOUT

Description of function

The signals provided by the LED (and their interpretations) are as follows:

Lit

⟹ The output frequency is indicated.

Unlit

⟹ A feature other than the output frequency is indicated.

1.2.5.15 Up arrow key, frequency converter

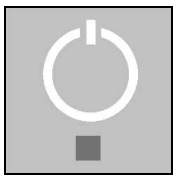
Description of function

Used to move partial image up, move cursor up, and increase values.

1.3 Display elements

1.3.1 LED status display

1.3.1.1 LED electric power supply

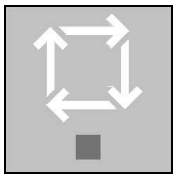


Type of element: LED

Display state

- Does not light up
  There is no control voltage
  The main switch is off
- Lights up
  There is control voltage
  The main switch is on
- Flashing
  An interruption in the power supply has caused the control system to switch off.
  After switching on, the LED flashes until a control key or machine key is actuated.

1.3.1.2 LED automatic mode (production mode)

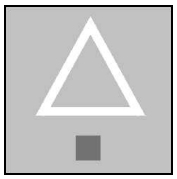


Type of element: LED

Display state

- Does not light up
  Production mode has stopped.
- Lights up
  Machine runs in automatic mode (production mode).
  State of the machine= Production mode
- Flashing
  Going into production mode

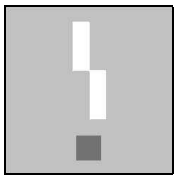
1.3.1.3 LED "Alert"



Type of element: LED

Lights up if there is an alert.

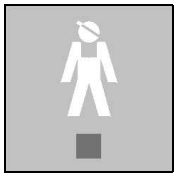
1.3.1.4 LED "Malfunction"



Type of element: LED

Lights up if there is a malfunction.

1.3.1.5 LED call "Service personnel"

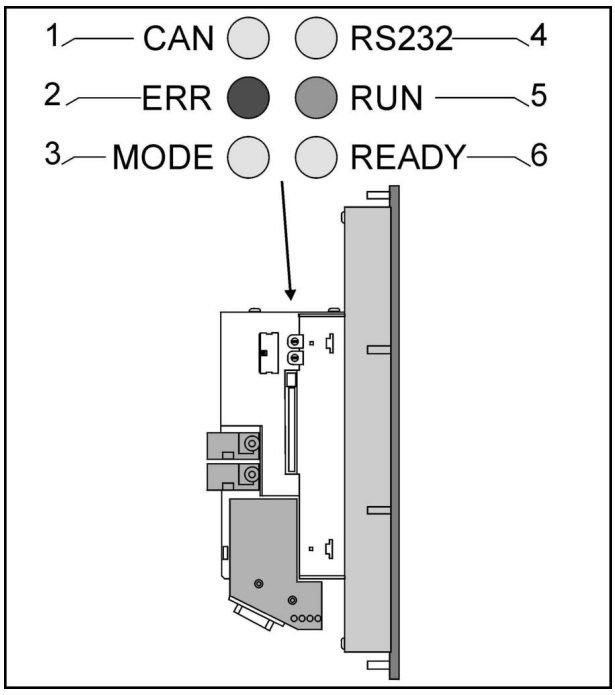


Type of element: LED

Lights up if you have to call service personnel to rectify a malfunction.

1.3.2 LED's for CPU status on the basic module of the control system

1.3.2.1 CPU status, display on the basic module of the control unit



Type of element: 6 LEDs

The six status LEDs indicate the operating mode of the control unit.

Display state

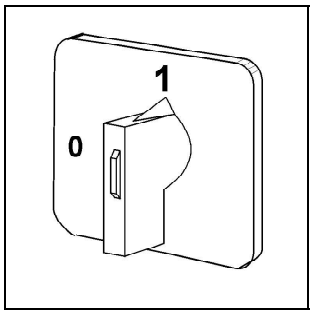
- (1) Flashing, Yellow
  Data communication from or to the CAN controller.
- (2) Lights up, Red
  Service mode is active, e.g. for software download.
- (3) Lights up, Yellow
  Software download into Flash-PROM is running
- (4) Flashing, Yellow
  Indicates whether data is being received or sent at the RS232-interface
- (5) Lights up, Green
  RUN.
- (6) Lights up, Yellow
  Service mode is active.

2 Operation

2.1 Safety

2.1.1 Switching on main switch Q10

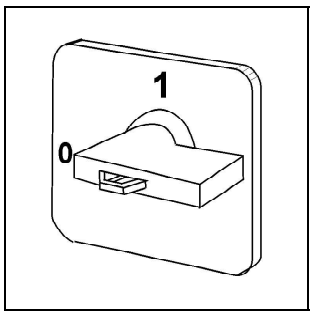
Steps



– Turn the main switch to position "1".
  ⟹ The LED for the control voltage begins to flash, light up
  ☞ Main switch, Page 2/8

2.1.2 Switching off the main switch.

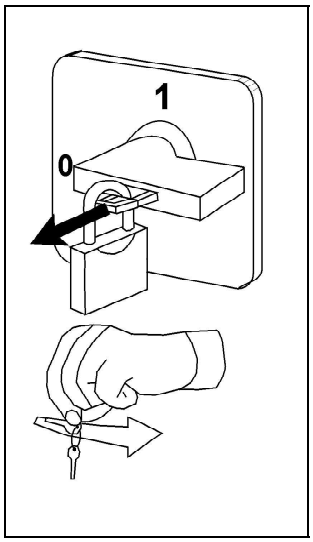
Steps



– Turn the main switch to position "0".
  ⟹ The LED for the control voltage goes out.
  ☞ Main switch, Page 2/8

2.1.3 Switch OFF the main switch and secure

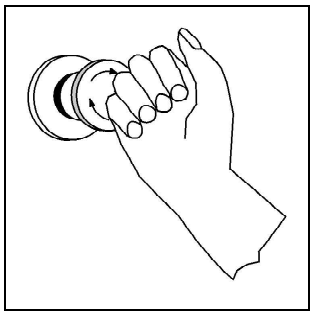
Steps



– Switch OFF the main switch.
– Pull the lever (1) in the direction of the arrow and attach a padlock.
– Close the padlock.

2.1.4 Engaging the emergency stop

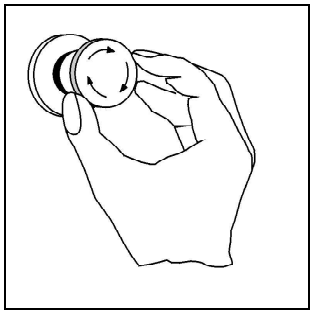
Steps



– Press the EMERGENCY STOP button.
  ⟹ The machine is put into a safe operating state as quickly as possible.

2.1.5 Resetting the EMERGENCY STOP button

Steps



– **Prerequisite:** The reason for engaging the EMERGENCY STOP have been clarified and remedied.
  Turn the EMERGENCY STOP button clockwise.
  ⟹ The EMERGENCY STOP button will pop up. Doing so has reset the EMERGENCY STOP button; it is no longer engaged.

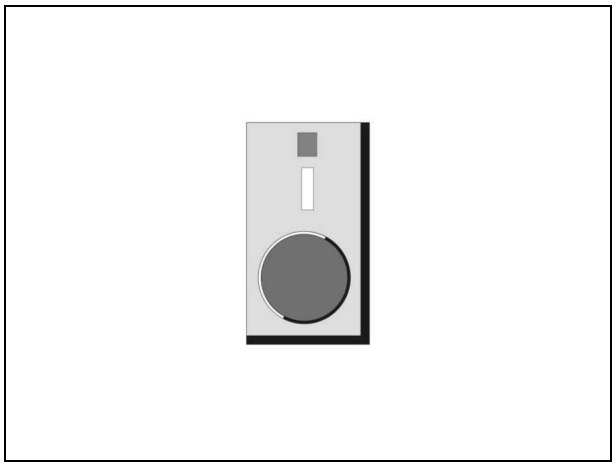
2.2 Operating the machine (without R/S module)

2.2.1 Starting the machine

Preparatory work

– The machine is programmed

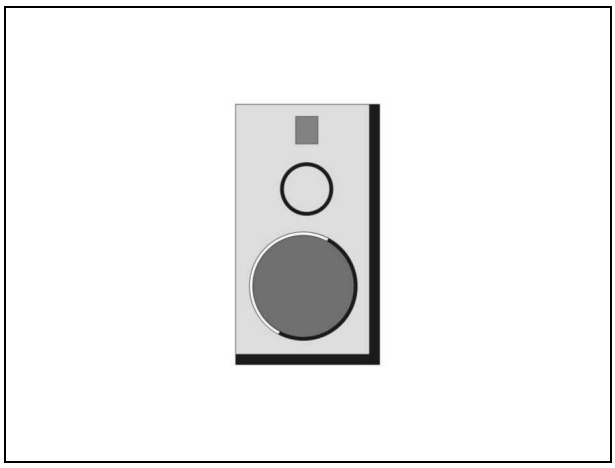
Steps



– **Prerequisite:** Main switch is switched ON. No malfunctions are indicated.
Press the START button.
⟹ The preliminary opening roller and the take-off roller start. If material is requested and the storage unit is ready for operation, the spiked lattice will also start.

2.2.2 Stop machine

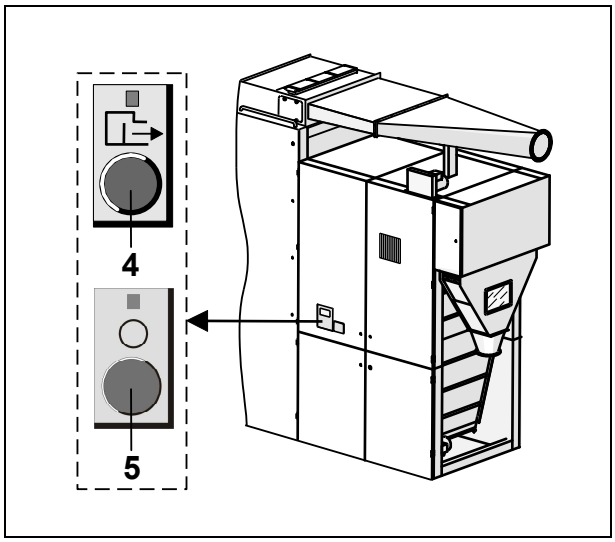
Steps



– Use the STOP button to stop the machine at any time.
⟹ All drives switch off.

2.2.3 Emptying the machine

Steps



– Press machine button (4) on the operating unit.

⟹ Material feed to the storage unit of the machine is stopped. The machine empties.

Note: Press machine button (4) again to re-start the feeding of material to the storage unit.

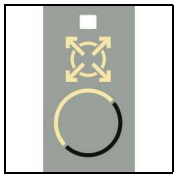
– **Prerequisite:** The machine (still ready to operate following the emptying procedure) is to be stopped.

Press machine button (5).

⟹ The machine will be stopped.

2.2.4 Rectifying machine deficiencies.

Steps



– The spiked lattice and the conveyor belt run in reverse all the while the button remains pressed.

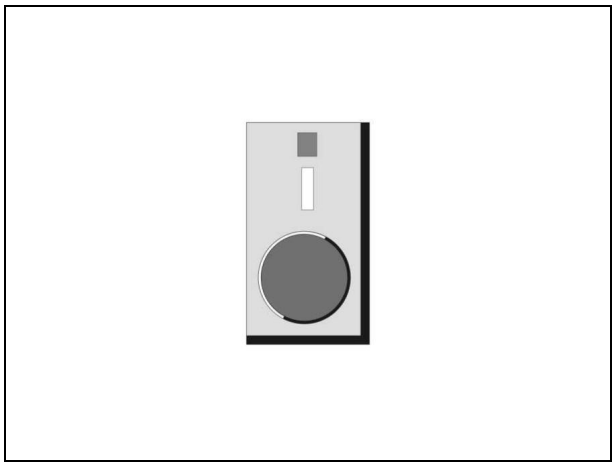
2.3 Operating the machine (with R/S module)

2.3.1 Starting the machine

Preparatory work

– The machine is programmed

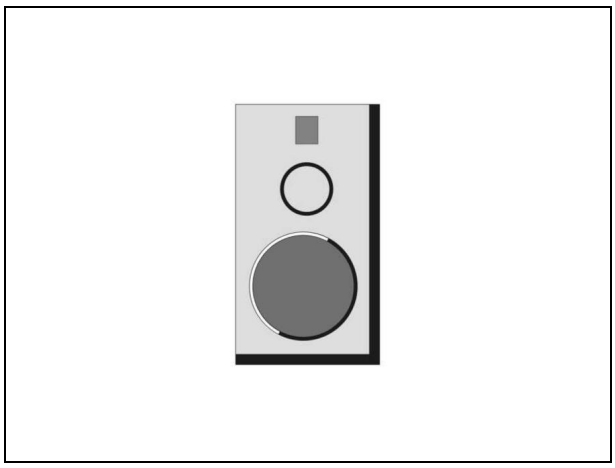
Steps



– **Prerequisite:** Main switch is switched ON. No malfunctions are indicated.
Press the START button.
⟹ The preliminary opening roller and the take-off roller start. If material is requested and the storage unit is ready for operation, the spiked lattice will also start.

2.3.2 Stop machine

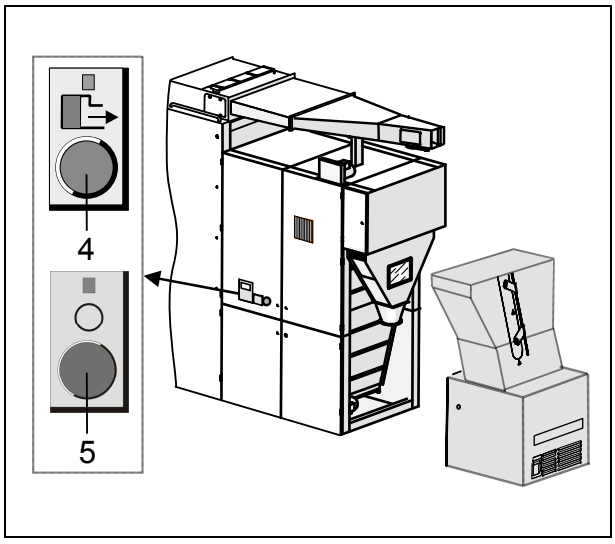
Steps



– Use the STOP button to stop the machine at any time.
⟹ All drives switch off.

2.3.3 Emptying the machine (R/S module attached)

Steps



– Press machine button (4) on the operating unit.

  ⟹ Material feed to the storage unit of the machine is stopped. The machine empties. Once the machine is empty, the compression and feed rollers, along with the opening roller, are stopped. The machine remains ready for operation.

  Note: Press machine button (4) again to re-start the feeding of material to the storage unit.

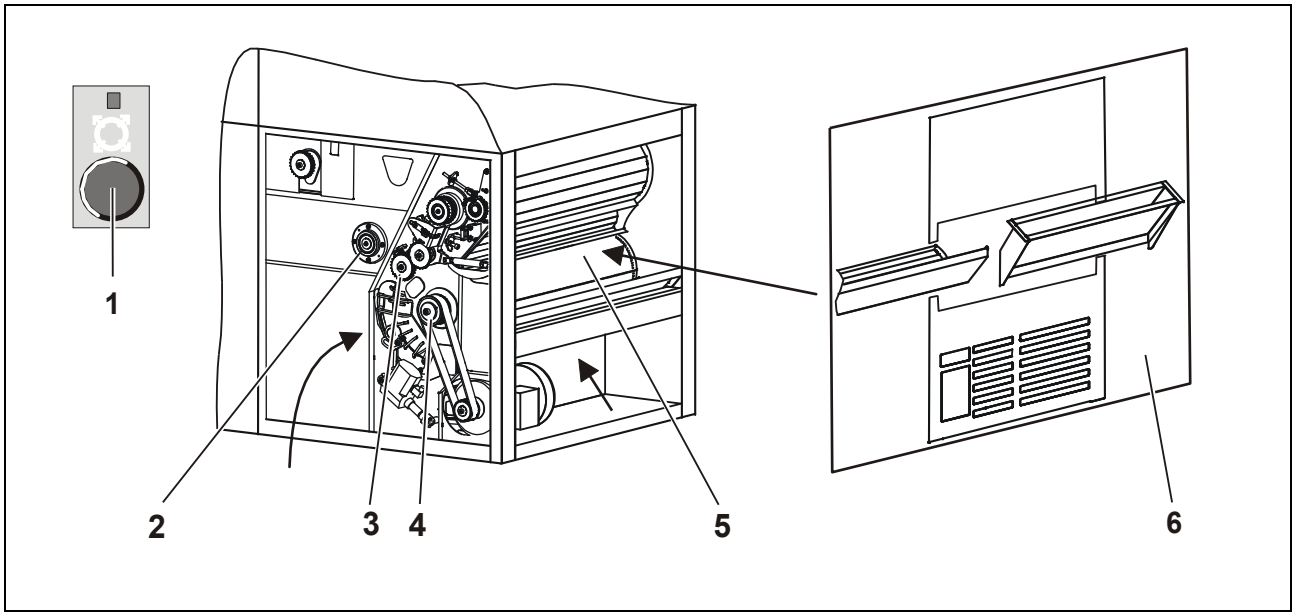
– **Prerequisite:** The machine (still ready to operate following the emptying procedure) is to be stopped.

  Press machine button (5).

  ⟹ The machine will be stopped.

2.3.4 Clearing of blockages and rectification of machine deficiencies.

Clearing blockages (feed and compression rollers can be rotated in the reverse direction)



– **Prerequisite:** The doors must be closed. The machine is ready for operation but is not producing. There must be no faults displayed.
  Rectify and confirm the cleared status of any fault displayed.
  ☞ How to acknowledge a malfunction., Page 2/28

– Press and hold machine button (1).
  ⟹ The compression rollers (2) and the feed rollers (3) rotate in reverse.

– After 20 - 30 seconds, release machine button (1).

– Attempt to move the opening roller (5) by rotating the belt pulley (4).

– If the opening roller (5) can be moved freely, the machine can be restarted.
  ⟹ If the opening roller (5) is blocked, remove the material responsible for the blockage.

Clearing blockages (feed and compression rollers cannot be rotated in the reverse direction)

WARNING
Set the main switch to the “off” position and secure it with a lock.

– Remove all covers (6).

– Remove the material responsible for the blockage from the area around the opening roller (5) by hand, or using suitable tools.

– Continually attempt to move the opening roller (5) by rotating the belt pulley (4).

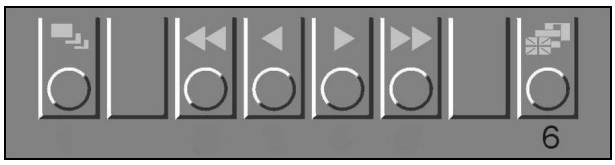
– Once the opening roller (5) can be moved freely, re-mount all covers (6).
  ⟹ Then restart the machine.

2.4 Operating unit

2.4.1 Change the language

The "LANGUAGE SELECTION" key allows different languages to be selected.

Steps



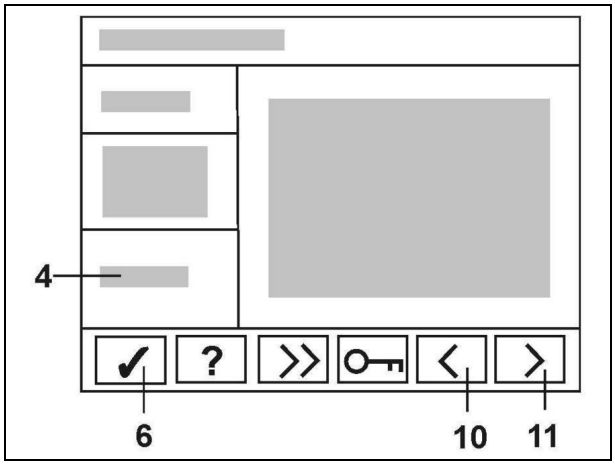
– **Prerequisite:** The required language must be activated using the data screen .
☞ 40.2, Page 2/66
Press the "LANGUAGE SELECTION" key (6) until the required language is displayed.
☞ LANGUAGE-key, Page 2/14

2.4.2 How to acknowledge a malfunction.

In the event of a malfunction, the corresponding malfunction mask appears in the overview.

Note: Press the "ACKNOWLEDGE" key and/or "START" key to reset errors that no longer exist.

Steps



– Press the "ACKNOWLEDGE" key (6).
⟹ Once the malfunction is remedied, it is reset, i.e. no longer displayed.
Note: The "ACKNOWLEDGE" key appears only when the displayed malfunction is no longer current. Otherwise, the malfunction must first be cleared.
☞ ENTER-key, Page 2/9

– Box (4) indicates the number of malfunctions. Use the (11) key to display the next malfunction. Use the (10) key to display the previous malfunction.

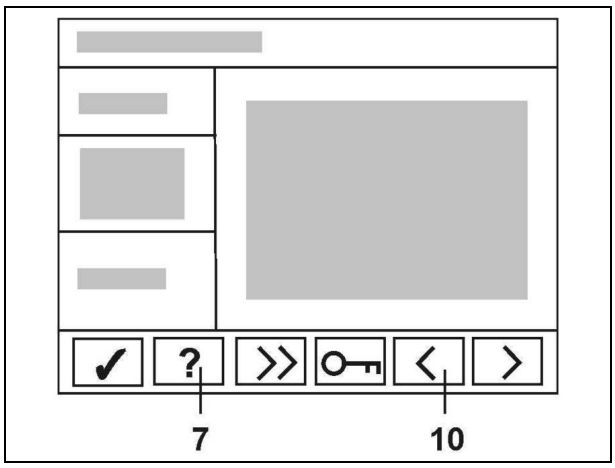
– Press the "START key" to start up the machine once all the malfunctions have been cleared. If malfunctions are still present, however, then these will be displayed and the machine will not start.

2.4.3 Display additional help for troubleshooting

If a malfunction is displayed, an additional help text may sometimes also be displayed.

Note: A supporting help message is only offered for complex malfunctions.

Steps



– Press the "HELP" key (7).
  ⟹ The error display is overwritten by an additional help message.
  ☞ HELP-key, Page 2/10
  ☞ Example of a message display, Page 2/54
– Press "DISPLAY back" key (10).
  ⟹ The malfunction mask is displayed again.
  ☞ SCREEN-key back, Page 2/12

2.4.4 Enter password

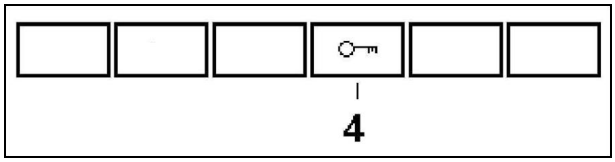
Some entries and tests in data screens can only be executed with the required authorisation after entering a password.

Authorization levels

Level 0 (no password)	Read
Level 1 (password required)	Change
Level 2 (password required)	Service
Level master (password required)	Change passwords

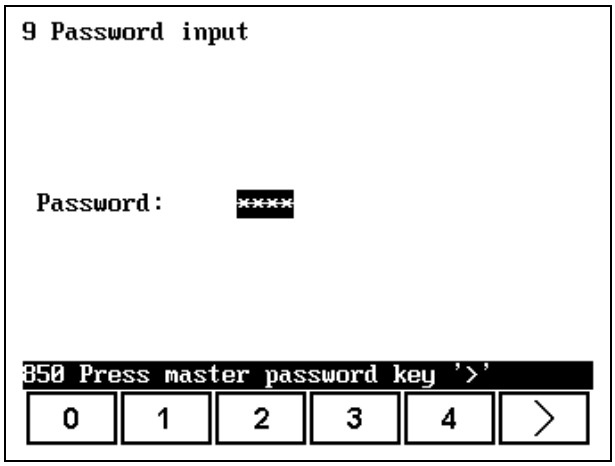
Note: The authorisation necessary for an intended action is shown in the list of menu and data screens.

Steps



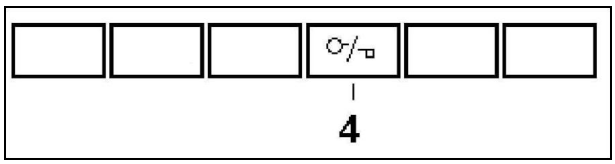
– Select main mask.
☞ Display main mask, Page 2/34

– Press the "ENTER PASSWORD" key (4) in the main mask.
⟹ The mask for the password input is displayed.
☞ 9, Page 2/78



– Enter the corresponding 4-digit password using softkeys 1-5.
Note: Valid digits for the password are 0-4 that can be entered using the first 5 programming keys.

– Press the "C" key to delete the code and enter a new one.



– After entering the password, press one of the keys "<<", "<", ">", ">>" or the “MAIN MASK” key.
⟹ The crossed out key (4) is displayed in the main mask, i.e. the password has been accepted and the appropriate authorisation, e.g. for input, is active.
☞ PASSWORD-CANCELLING key, Page 2/11

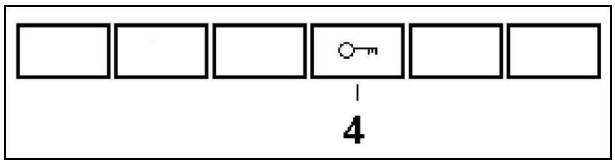
– After entering the password you can go in the menu overview where the appropriate menus are displayed and enabled.

2.4.5 Changing passwords

The passwords for the various authorisations can be assigned and changed individually. The master password can also be changed.

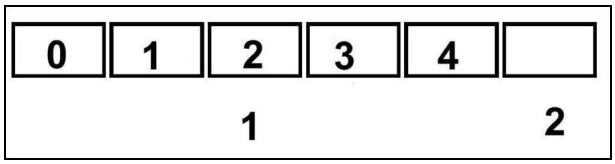
Note: In order to alter the password, you must know the master password.

Steps

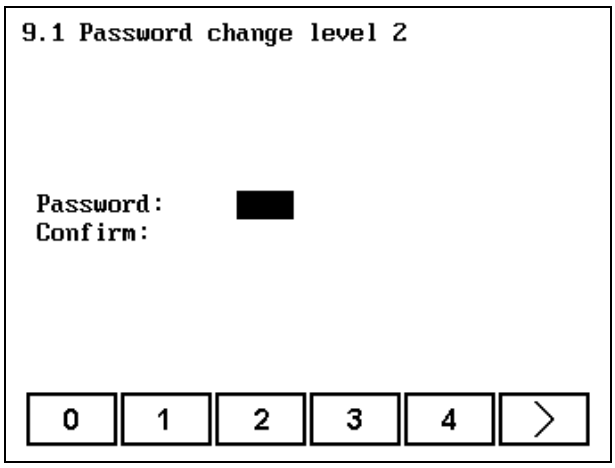


– Select main mask.
  ☞ Display main mask, Page 2/34

– Press the "ENTER PASSWORD" key (4) in the main mask.
  ⟹ The mask for the password input is displayed.
  ☞ Enter password, Page 2/30
  ☞ 9, Page 2/78



– Now enter the master password (1) and press the "DISPLAY forward" key (2).
  ⟹ The mask for changing the password is displayed.
  ☞ 9.1, Page 2/78



– Enter the new code twice per password and display the next password step by pressing the sixth programming key ">".

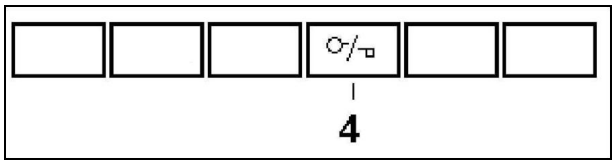
  Note: If you do not want to change a password, you can go on to the next password step by pressing the programming key ">".

2.4.6 Cancelling the password authorisation

By cancelling the password authorisation, you can prevent anybody not authorised from altering data or carrying out test functions.

Note: The password authorisation for inputs is automatically cancelled if no key is pressed for 10 minutes. For tests it is after 10 hours.

Steps



– Select main mask.
  ☞ Display main mask, Page 2/34

– Press the "CANCEL PASSWORD" key (4) in the main mask.
  ⟹ The key symbol for the programming key is no longer crossed out, i.e. the password authorisation is cancelled. A new password input is necessary in order for data to be changed or tests to be run.
  ☞ PASSWORD-CANCELLING key, Page 2/11

2.4.7 What do you do if you have forgotten the master password?

Note: The master password is required for changing passwords. This master password should only be known to an administrator.

Steps

– If the master password is no longer known, a special password has to be requested from Rieter that is valid for one day.

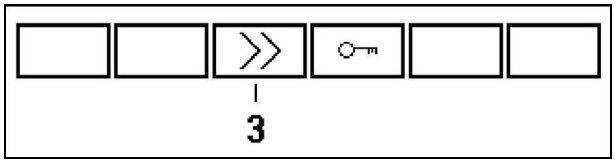
– On delivery of the machine, the authorisations S2 - S3 are assigned the standard password 1001. The master password is 1423.

2.4.8 Displaying an individual data screen

In order to view actual values, alter settings or run tests, it is necessary to display the appropriate data screen.

Note: Before a data screen with authorisation protection can be displayed you must first enter the appropriate password.

Steps

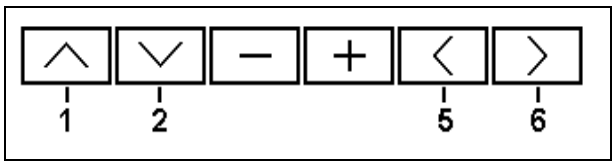


– **Prerequisite:** A main mask (overview mask or error) is displayed.

Press the "MENU OVERVIEW" key (3).

⟹ The menu overview is displayed.

☞ MENU overview key, Page 2/10



– Press the "CURSOR forward" (2) or the "CURSOR back" key (1) until the required menu is marked.

☞ POINTER key forward, Page 2/10

☞ POINTER key back, Page 2/9

– Press the "DISPLAY forward" key (6) or the "DISPLAY back" key (5) until the required data screen is displayed.

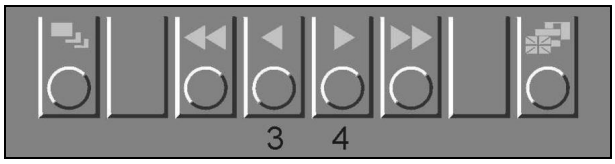
☞ SCREEN-key scroll forwards, Page 2/12

☞ Navigating to a desired data screen with one key, Page 2/33

2.4.9 Navigating to a desired data screen with one key

There is another easy method of accessing the data screens.

Steps



– Press the "DISPLAY forward" key (4) or "DISPLAY back" key (3).

⟹ Each touch of the key calls up the next or the previous data screen or menu.

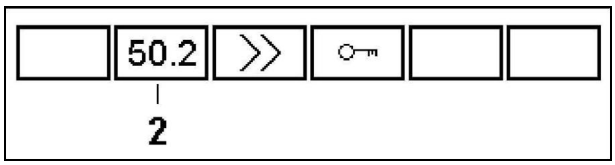
☞ DATA-DISPLAY-key-forward, Page 2/13

☞ DATA-DISPLAY-key-back, Page 2/13

2.4.10 Display the last data screen again

In the overview mask you can use the "DIRECT back" key to return to the data screen you were viewing last. (In this example you jump to data screen 50.2).

Steps



– Press the “DIRECT back” key (2).

⟹ The last data screen displayed is shown again. (In this example you jump to data screen 50.2).

☞ DIRECT-key back, Page 2/10

2.4.11 Browsing in the same masks

Browsing from one overview mask to another if there are several of them. Display the next malfunction if there are several pending malfunctions simultaneously.

Steps

– Press the "DISPLAY forward" or "DISPLAY back" key (programming key 5 or 6).

⟹ The next masks are selected.

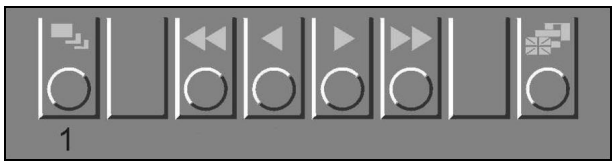
☞ SCREEN-key scroll forwards, Page 2/12

☞ SCREEN-key back, Page 2/12

2.4.12 Display main mask

Independently of which mask is on the screen, touching any key immediately changes the display back to the main mask (standard overview mask or error display).

Steps



– Press the "MAIN MASK" key (1) once.

☞ BASIC display key, Page 2/13

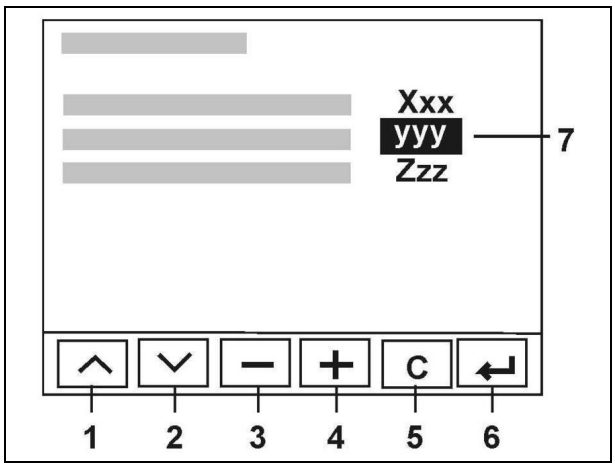
– If a malfunction is displayed, the standard overview mask appears as long as the "MAIN MASK" key (1) is pressed.

☞ BASIC display key, Page 2/13

2.4.13 Changing values/settings in data screens

Values and settings can be changed in the corresponding data screens. To do so, first enter the password for input authorisation.

Steps



– If several modifiable values are displayed in the data screen, first use the "CURSOR forward" (2) or the "CURSOR back" key (1) to highlight the value to be changed (7).
  ☞ POINTER key forward, Page 2/10
  ☞ POINTER key back, Page 2/9

– Change the value with the "PLUS" key (4) or the "MINUS" key (3).
  ☞ MINUS-key, Page 2/10
  ☞ PLUS-key, Page 2/11

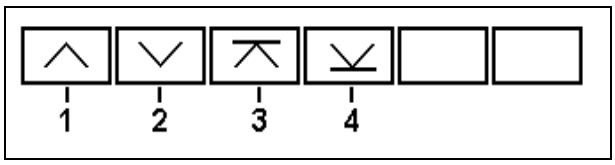
– If an incorrect value was entered, you can use the "DELETE" key (5).
  ⟹ The original value (before you pressed the "+" or "-" key) is displayed again.
  Note: The “DELETE” key appears only if the changed values have to be confirmed.
  ☞ DELETE key, Page 2/12

– Press the "ENTER" key (6) to confirm the input and to save the change.
  Note: The “ENTER” key appears in the bottom right-hand corner only if the changed values have to be confirmed.
  ☞ ENTER-key, Page 2/12

2.4.14 Browsing lists

Displayed lists may be larger and may therefore not be completely displayed on the screen. The following programming keys are provided in the data screen for this.

Steps



– Press the "CURSOR forward" (2) or the "CURSOR back" key (1).
  ⟹ The mark is moved up or down by one field.
  ☞ POINTER key back, Page 2/9
  ☞ POINTER key forward, Page 2/10

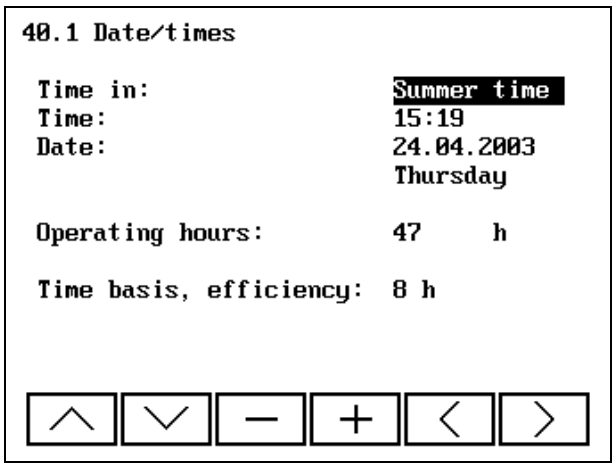
– Press the "START OF LIST" key (3).
  ⟹ This takes you to the beginning of the list.
  ☞ START OF LIST key, Page 2/10

– Press the "END OF LIST" key (4).
  ⟹ This takes you to the end of the list
  ☞ END OF LIST key, Page 2/11

2.4.15 Changing from standard time to summer time

The changeover from standard time (winter time) to summer time or vice-versa is made via the operator panel.

Steps



– **Prerequisite:** First enter at least the input password.

  Display data screen 40.1.

  ☞ 40.1, Page 2/66

– Change the time displayed in the second row with the "PLUS“ key or the "MINUS“ key.

– Press the “ENTER" key to save the change.

  ⟹ The time displayed in the data screen is now one hour forward or back.

  ☞ ENTER-key, Page 2/12

2.4.16 Sensor testing and display of I/O status via signal lamp

All elements such as sensors, switches etc. whose I/O status is read by the control system can be tested. This is done in data screen 81.1. The I/O status (1 or 0) of the selected element is displayed in the data screen as well as at the signal lamp.

Steps

– Display data screen 81.1.

– Select element group and element.

  ⟹ The I/O status is displayed in the data screen as 1=24 VDC or 0=0 VDC. Display on signal lamp: 0=dark, 1=lit up.

2.4.17 Performing service functions

WARNING
Activating machine functions via data screens causes mechanical movements to be triggered immediately.
Risk of injury due to moving machine parts.
Ensure that there is no person present in the hazard zone.
Only authorised and trained personnel may perform tasks in service mode.

Individual machine functions can be performed for troubleshooting and maintenance work.

Steps

– All doors and covers in the safety loop must be closed.

– **Prerequisite:** The password has to be entered first.
Display data screen 80.1 and select operating mode "Service".
☞ 80.1, Page 2/70

– Call up the appropriate test data screen (82.1 to 8n.n) that allows the function test to be performed.
☞ 82.1, Page 2/72

– Select the element to be tested.

– Select the desired function.

– Press the "ENTER" key to confirm your choice.
☞ ENTER-key, Page 2/12

WARNING
This service function initiates immediate movement that might cause injury.
No person is permitted to be present in the hazard zone.

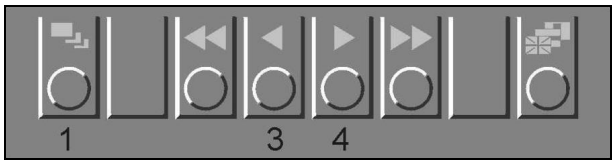
– Press the green "START" key.
⟹ The function is initiated. The data screen also shows the states of the sensors concerned and, if necessary, whether the function has started (=1) or stopped (=0).

Note: Most functions stop immediately as soon as you release the "START" key. Otherwise the function can always be stopped by pressing the "STOP" key.

2.4.18 Setting the brightness of the display

If the display is difficult to read or if some dark areas are visible, this can be improved by adjusting the brightness.

Steps



– Press the "MAIN MASK" key (1) simultaneously with the "DISPLAY forward" key (4).
  ⟹ The mask gets lighter.
  ☞ BASIC display key, Page 2/13
  ☞ DATA-DISPLAY-key-forward, Page 2/13

– Press the "MAIN MASK" key (1) simultaneously with the "DISPLAY back" key (3).
  ⟹ The mask gets darker.
  ☞ BASIC display key, Page 2/13
  ☞ DATA-DISPLAY-key-back, Page 2/13

2.5 Electronic documentation (e-DOC)

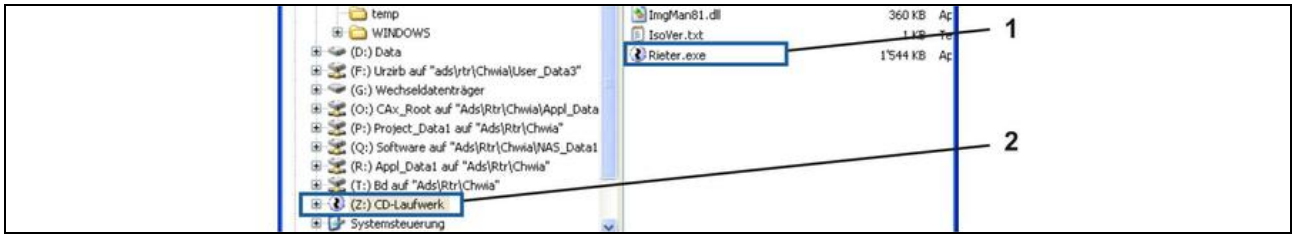
2.5.1 Navigating through the e-DOC (electronic documentation) program

Finding information on the contents of e-DOC

– Information on the contents of e-DOC can be found in “Manuals and diagnostics” (1)
  Note: The e-DOC program contains the following technical documents relevant to the machine: Operating manual, troubleshooting information, spare parts catalogue and spare parts ordering information, operating manuals in PDF format, spare parts catalogues and electrical documentation, marketing information, training information and forms.

– The following actions are possible: 1. Ordering of spare parts 2. Retrieval of information on the fitting and removal of spare parts 3. Retrieval of information on rectifying faults 4. Search for technical terms.

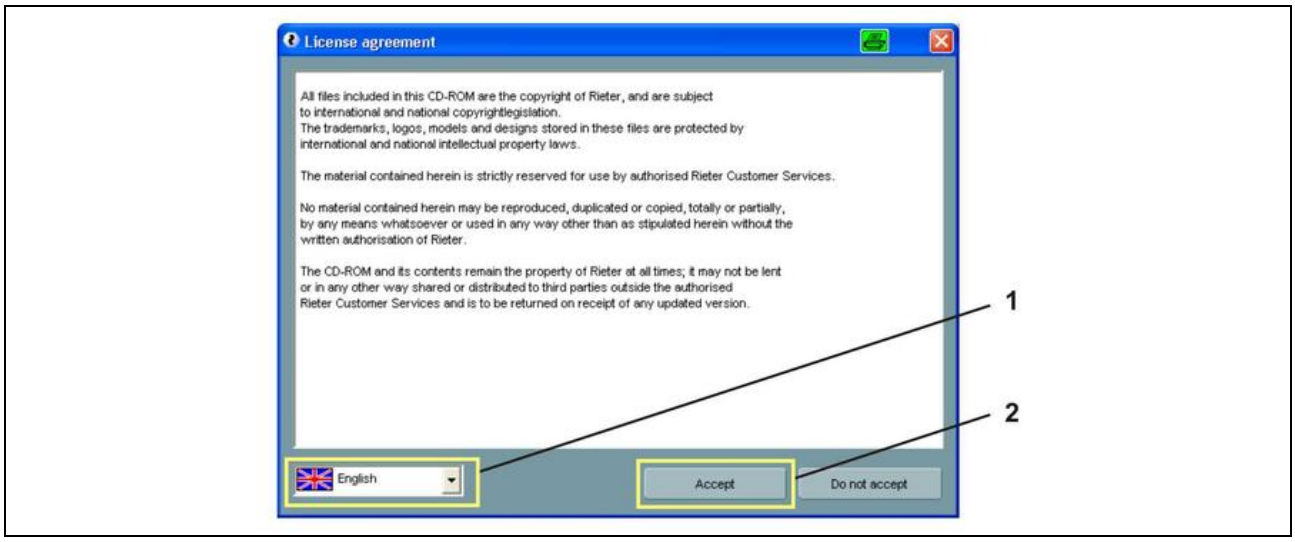
2.5.2 Opening e-DOC



– Select the appropriate drive (2) and open e-DOC (1).

Note: The relevant (country-dependent) WINDOWS operating system has to be used to open the e-DOC program, so that the lines are displayed correctly.

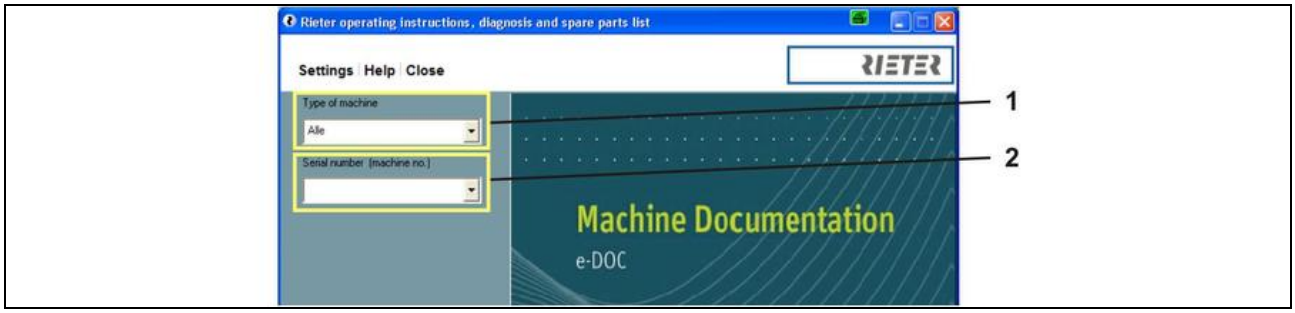
2.5.3 Selecting the language and accepting the licence agreement



– Select the language for the e-DOC program (1).

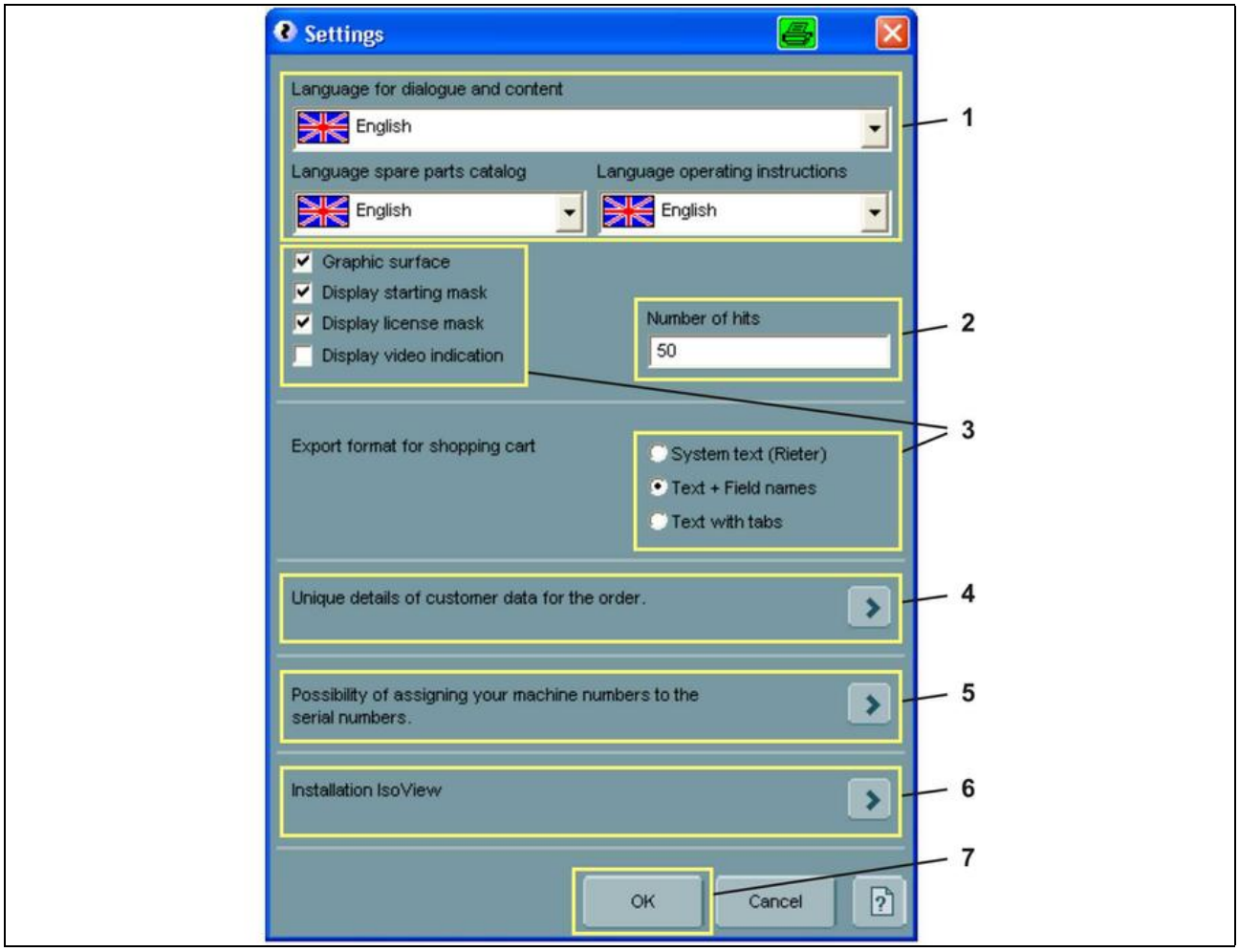
– Read and accept the licence agreement (2).

2.5.4 Opening the home page



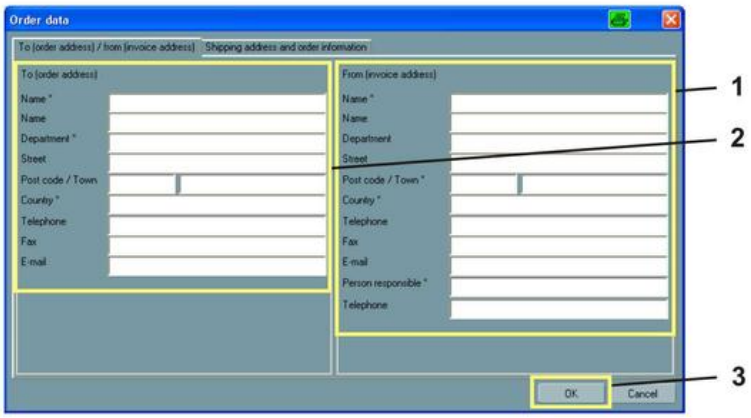
– Select the machine type (1) and the machine number (2).

2.5.5 Opening the “Settings” menu and entering data



– Select the languages for dialogue and content, the spare parts catalogue and the operating manual (1).
– Select a limit for the number of search results (2).
– Make modifications to the output display format (3).
– Enter customer data for orders (4).
– Match machine data (5).
– Install the ISOView program (6).
– Click on OK to confirm the settings (7).

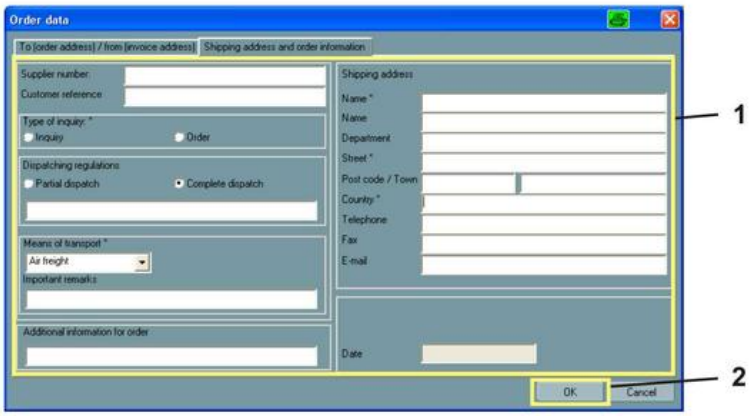
2.5.6 Entering ordering address



– Enter ordering address (1) and billing address (2).

– Click on OK to confirm the data (3).

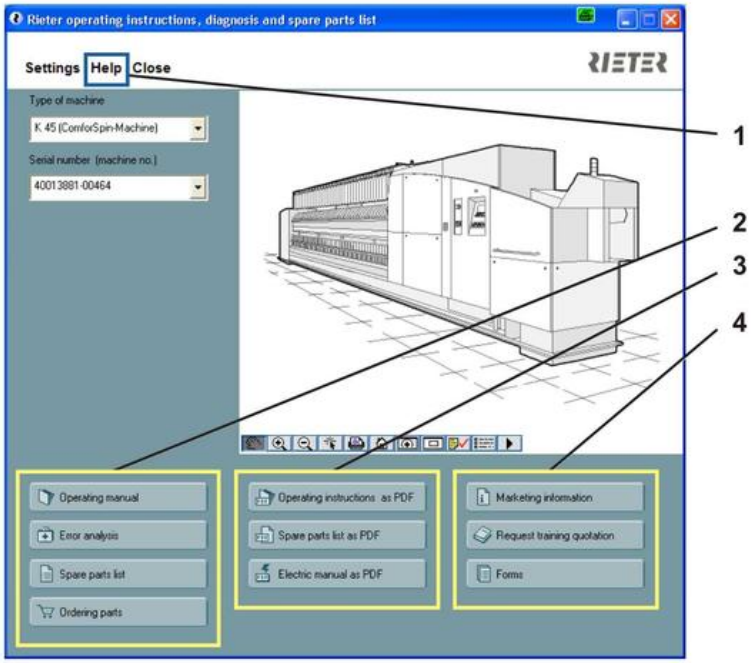
2.5.7 Entering recipient's address



– Enter the recipient's address, the supplier number and further order-related details (1).

– Click on OK to confirm the data (2).

2.5.8 Opening the e-DOC overview screen



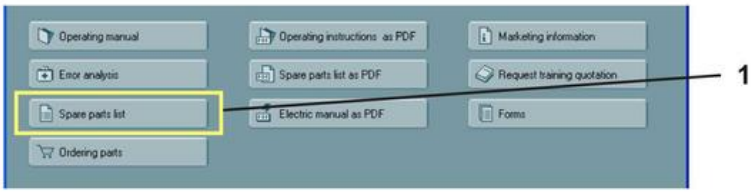
– Open the “Help” menu, if required, to bring up a description of the current page (1).

– Select the required technical document (2) (operating manual, troubleshooting information, spare parts catalogue, spare parts ordering information)

– Select the required technical document in PDF format (3) (operating manual, spare parts catalogue, electrical documentation)

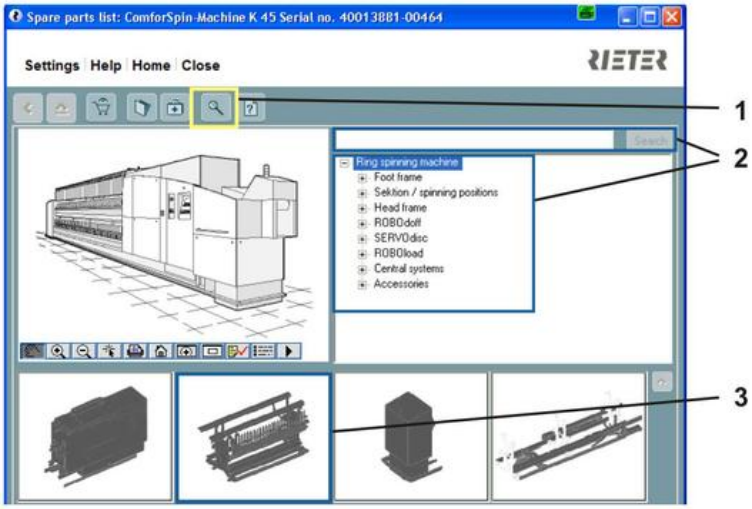
– Select information (4) on marketing and training, and select forms

2.5.9 Opening the spare parts catalogue



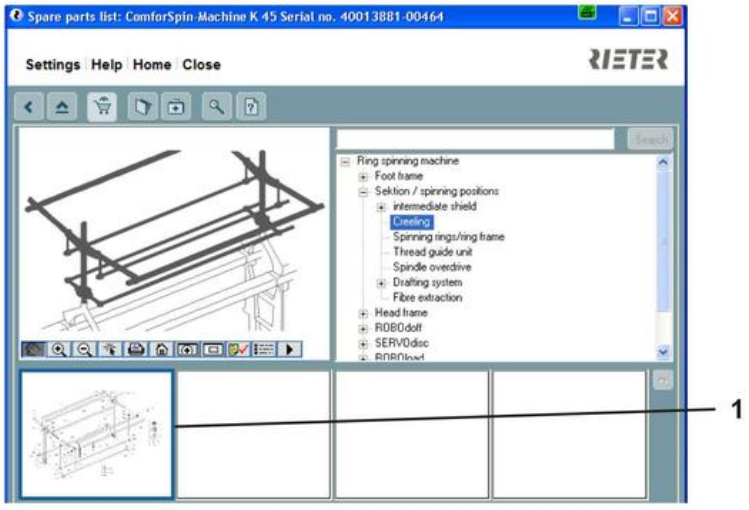
– Click on the appropriate button to open the spare parts catalogue (1).

2.5.10 Navigating through the spare parts catalogue



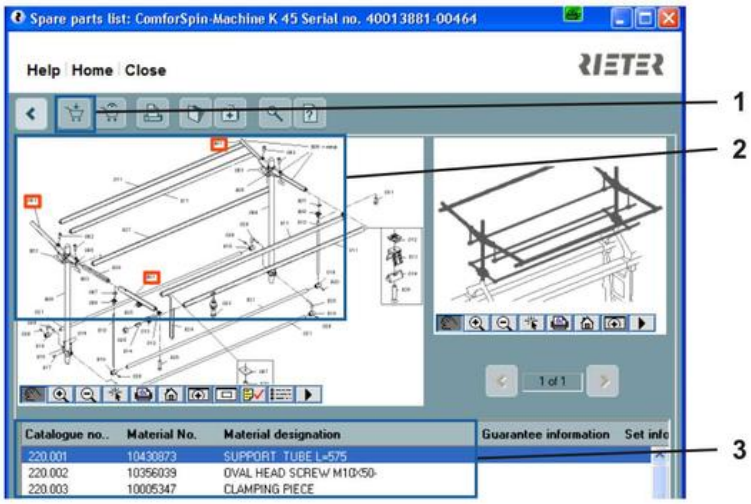
– Navigate via full-text search (1), or through text (2) or images (3). To this end, open the selected sub-assembly by double-clicking as appropriate.

2.5.11 Navigating through lower-level sub-assemblies in the spare parts catalogue



– Navigate through the images (1). To this end, double-click the image.

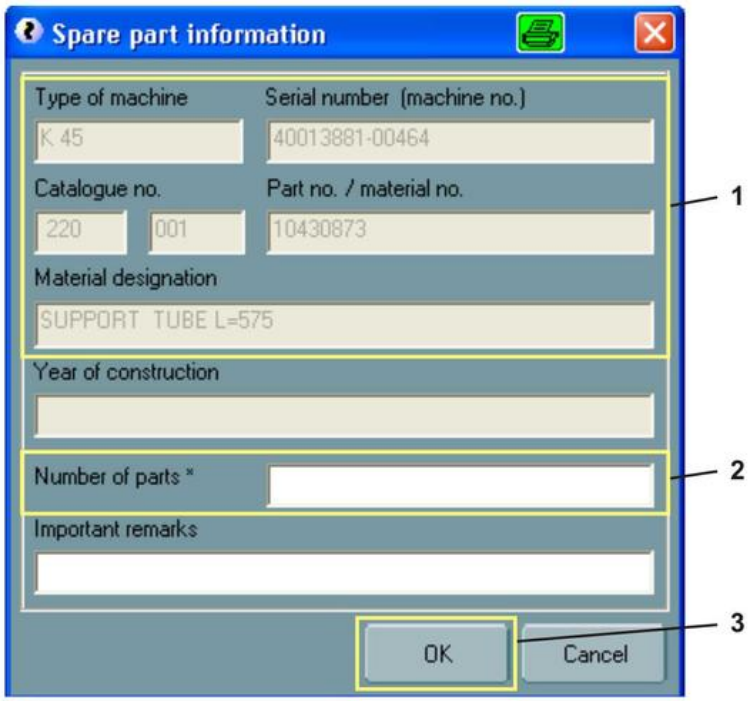
2.5.12 Selecting spare parts for sub-assemblies



– Mark the reference numbers of spare parts (2) or select the spare parts from the table (3).

– Open the shopping basket (1).

2.5.13 Filling in the order form

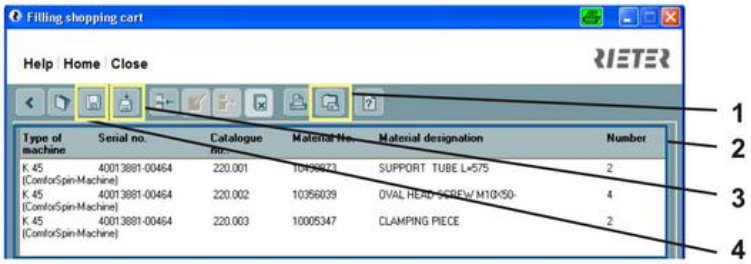


– A separate order form has to be filled in for each spare part.
  Note: The order form appears after the shopping basket is opened. The data for the selected spare part is automatically added to the order form by the system (1).

– Enter the required quantity for the spare parts (2).

– Check the details on the order form and click on OK to confirm the order (3).
  Note: After confirming the order, the spare part is “placed” in the shopping basket.

2.5.14 Saving the shopping basket information

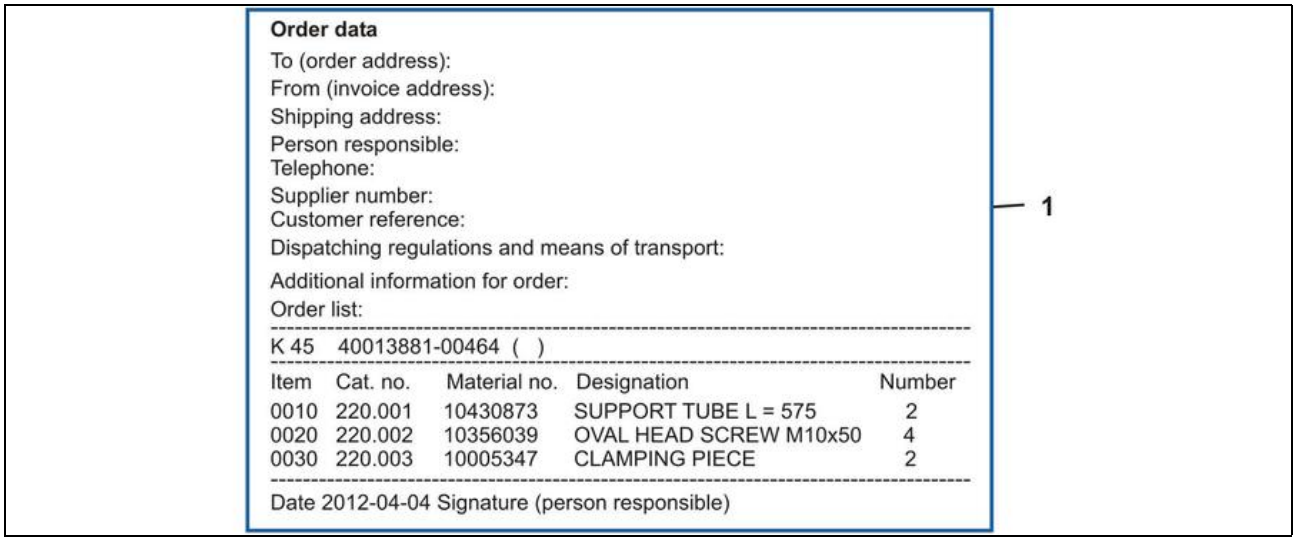


– Check the shopping basket contents (2).

– Copy the shopping basket information to the clipboard (1).

– Save the shopping basket information via the “Save as ...” function (3) or the “Save” function (4).

2.5.15 Example of an order



Order data

To (order address):
From (invoice address):
Shipping address:
Person responsible:
Telephone:
Supplier number:
Customer reference:
Dispatching regulations and means of transport:
Additional information for order:
Order list:

K 45 40013881-00464 ( )

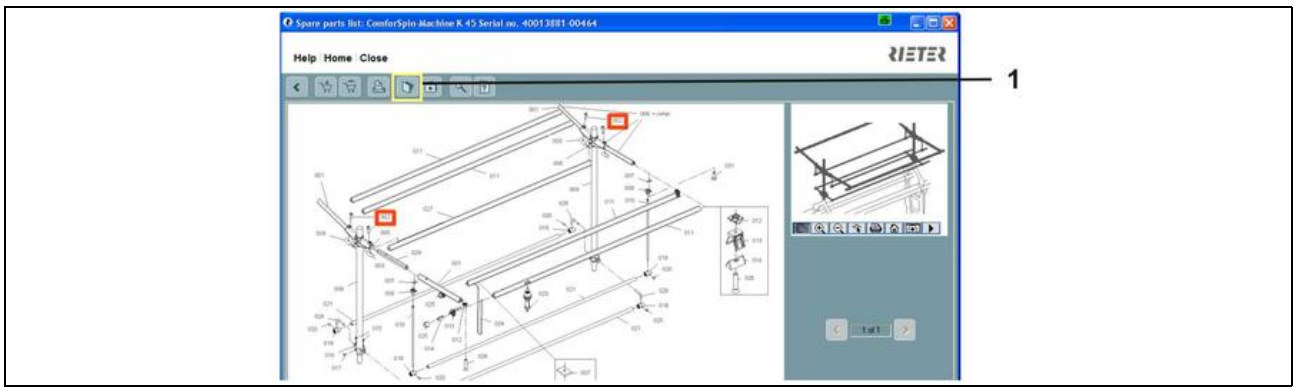
Item	Cat. no.	Material no.	Designation	Number
0010	220.001	10430873	SUPPORT TUBE L = 575	2
0020	220.002	10356039	OVAL HEAD SCREW M10x50	4
0030	220.003	10005347	CLAMPING PIECE	2

Date 2012-04-04 Signature (person responsible)

1

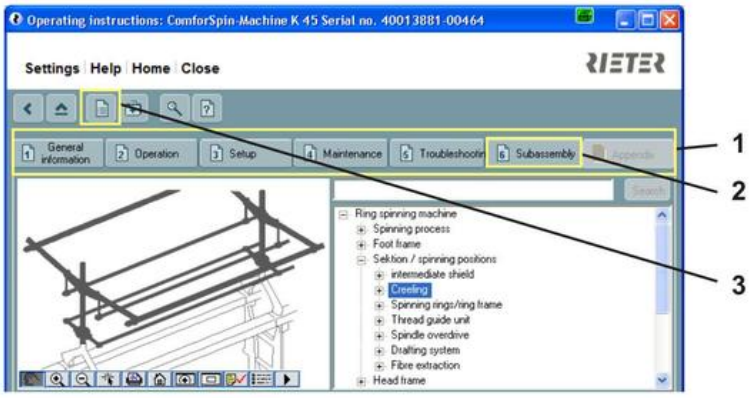
– Check the data shown on the order form (1).

2.5.16 Switching from the spare parts catalogue to the operating manual



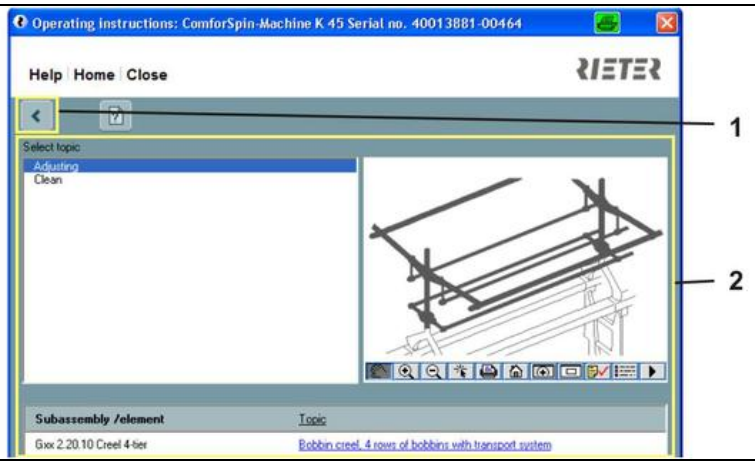
– Click on the appropriate button to switch from the spare parts catalogue to the operating manual (1).

2.5.17 Navigating through the operating manual



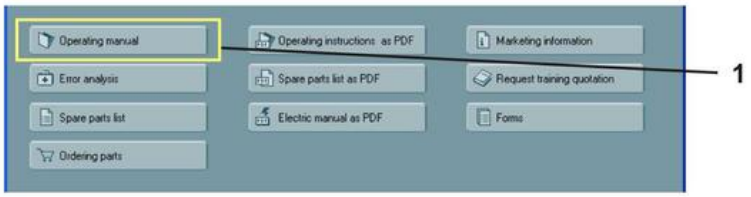
– Use the structure of the chapters to navigate through the operating manual (1).
– In the “Sub-assemblies” chapter, search according to handling instructions, e.g. fitting of spare parts (2).
– Switch to the spare parts catalogue (3).

2.5.18 Searching for handling instructions in the operating manual



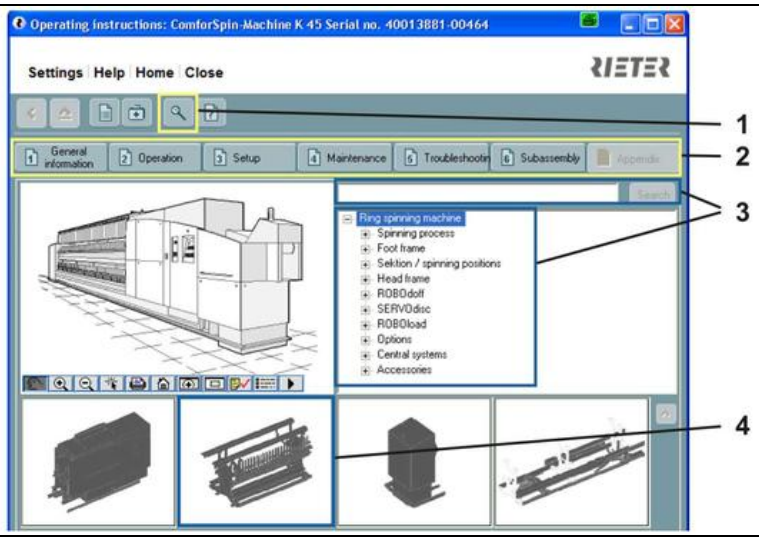
– Read the handling instructions (e.g. for “Settings”) in the operating manual and then carry them out (2).
– Go back one page (1).

2.5.19 Opening the operating manual



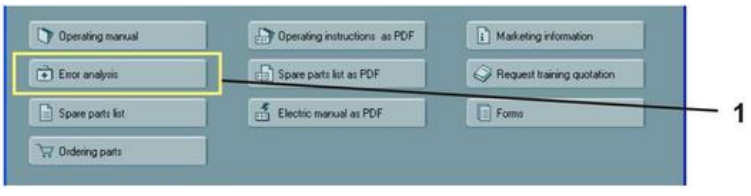
– Click on the appropriate button to open the operating manual (1).

2.5.20 Navigating through the operating manual



– Navigate via full-text search (1), or through chapters, text (2) or images (3).

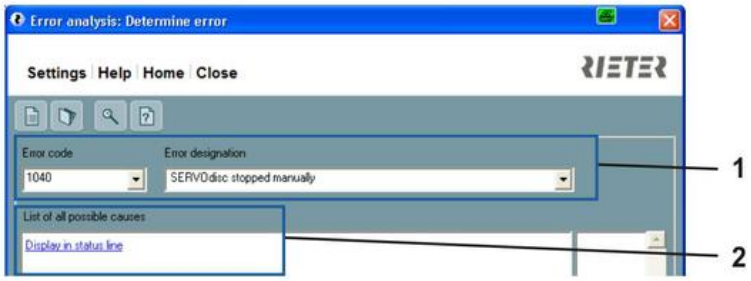
2.5.21 Opening the troubleshooting information page



– Click on the appropriate button to open the troubleshooting information page (1).

2.5.22 Entering the fault code

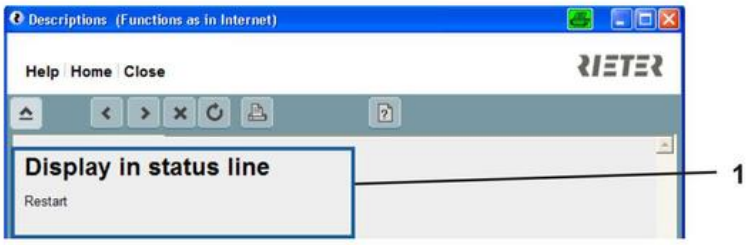
Procedure



– Enter the fault code or select from the list (1).

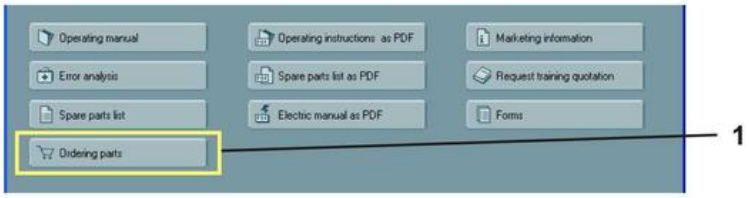
– Select suggestion (2).

2.5.23 Rectifying faults



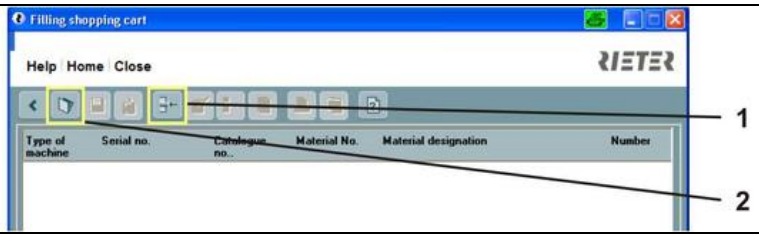
– Read and then carry out the work instructions (1).

2.5.24 Directly opening the order form for spare parts



– Click on the appropriate button to open the order form for spare parts (1).

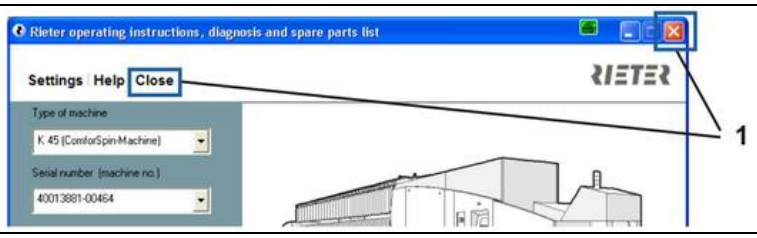
2.5.25 “Filling” and “saving” the shopping basket



– Enter the information for spare parts in the order form (1). Enter the data manually.

– Save the shopping basket information (2).

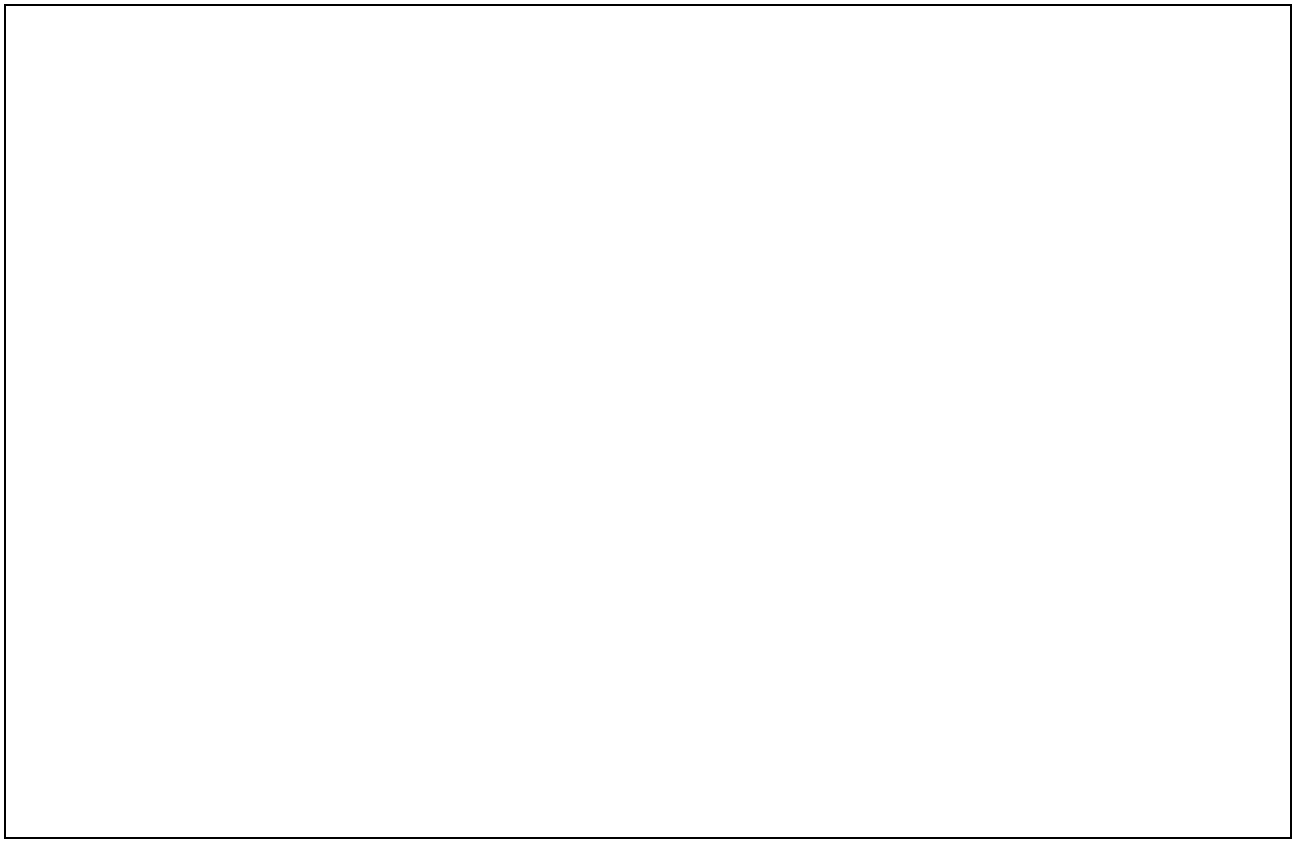
2.5.26 Closing the e-DOC program



– Click on the appropriate button to close the e-DOC program (1).

3 Display screens Operator panel

3.1 Structure of menu and data screens



The screen indicates which keys can be used to select the various screens on the display unit.

There are 3 types of displays:

Main screen (1):

Either an overview display or an error message will be shown if an error prevails. There might be more than one overview display or more than one error at the same time.

Menu overview (2):

Data displays are grouped in menus. From the menu overview the requested menu may be selected

Data screen (3):

In data displays, actual values are shown, settings are changed, and test functions are started.

Fault screen:

In the event of a fault, the corresponding fault screen is shown on the main screen. The description of the fault is indicated at the top. The fault code, the approximate location on the machine and the particular fault among the impending faults (e.g. 2.of 3 : 2/3) are displayed on the left. The exact location is indicated by a flashing rectangle on the large screen.

Overview screen:

If there is no pending fault, the overview screen, containing the most important current data of the machine, is displayed. There may be several overview screens. In data screen 40.2, the overview screen that is normally displayed can be configured.

3.2 List of menu and data screens

No.	Menu /data screens	Authorization	Page
10	**10 Production**		2/58
10.1	Settings	Change with password	2/58
10.1	Settings	Change with password	2/59
10.2	Efficiency	Change with password	2/60
11	**11 Machine functions**		2/61
11.1	Machine functions	No password	2/61
30	**30 Information, general**		2/61
30.1	Machine information	No password/Change in service mode	2/61
30.2	Actual values for mixer	No password	2/62
30.3	Actual values for feed module	No password	2/62
30.4	Input overview	No password	2/63
30.5	Outputs:	No password	2/63
30.6	Frequency converter	No password	2/63
31	**31 Information protocols / statistics**		2/64
31.1	Current warnings		2/64
31.2	Current maintenance warnings	No password	2/64
31.3	Current malfunctions		2/64
31.4	Events occurred	No password	2/65
31.5	Event statistics		2/65
31.6	Delete protocols / statistics	Change with password	2/65
40	**40 Setup values, general**		2/66
40.1	Date / times	Changing settings (password/service mode)	2/66
40.2	Languages	Change with password	2/66
40.3	Setup values pressure	Change with password	2/67
40.4	Setup values for mixer	Change with password	2/67
40.5	Set-up values for feed module	Change with password	2/68
41	**41 Setup values, configurations**		2/69
41.1	Configurations	Change in “Service mode”	2/69
80	**80 Operating mode**		2/70
80.1	Switch operating mode	Change (maintenance)	2/70

No.	Menu /data screens	Authorization	Page
81	**81 IO tests**		2/71
81.1	Inputs	Change in “Service mode”	2/71
81.2	Outputs	Change in “Service mode”	2/71
82	**82 Functional tests**		2/72
82.1	Conveyor belt, M21	Change in “Service mode”	2/72
82.4	Take-off roller, M24	Change in “Service mode”	2/73
82.5	Electric Travel cylinder M25	Change in “Service mode”	2/73
82.10	Electric Travel cylinder M33	Change in “Service mode”	2/74
82.11	Electric Travel cylinder M34	Change in “Service mode”	2/75
82.12	Distribution cylinder, Y1	Change in “Service mode”	2/75
83	**83 Endurance test**		2/76
83.1	Endurance test	Change in “Service mode”	2/76
84	**84 General test**		2/76
84.1	Push-button and LED test	Change (maintenance)	2/76

3.3 Overview screen

Example of a message display

One or several messages (malfunctions, warnings, events) are displayed on the display unit in the form of text and diagrams. If there are several messages pending simultaneously, these can be displayed individually.

1 Designation of the message.

2 Message code (e.g. error number).

3 Indicates graphically the general location of the event in the machine.

4 Shows the order and number of current messages.

Example 2/3: The second message of a total of three sequential messages is currently shown.

5 Shows the exact location of an event. The location on the machine is highlighted by a flashing rectangle.

6 ACKNOWLEDGE key: For acknowledging the current fault.

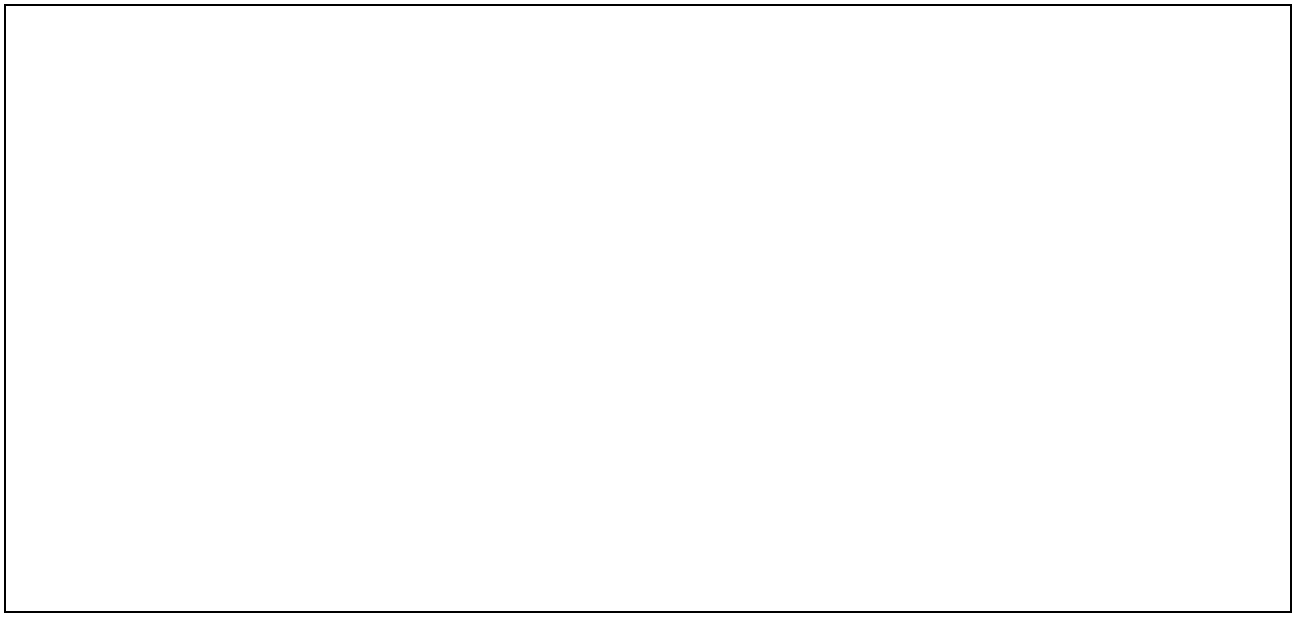
7 HELP key:to show additional help for the displayed event.

8 MENU key: to display the menu overview.

9 PASSWORD key: to display the password entry.

10 Mask back key:displays the previous message, if several events are reported.

11 MASK forward: displays the next message, if several events are reported.



Overview screen for UNImix with R/S module
If there are no faults pending, the following overview screen is displayed first.

1 Screen number

2 Storage unit fill level (100 % => storage unit full)

3 Solid arrow => material is being requested.

4 Opening roller: “0” indicates no motion, “1” indicates motion.

5 Feed fan is running.

6 Direction of rotation for the opening roller.

7 Spiked lattice: “0” indicates no motion, “1” indicates motion.

8 Take-off roller: “0” indicates no motion, “1” indicates motion.

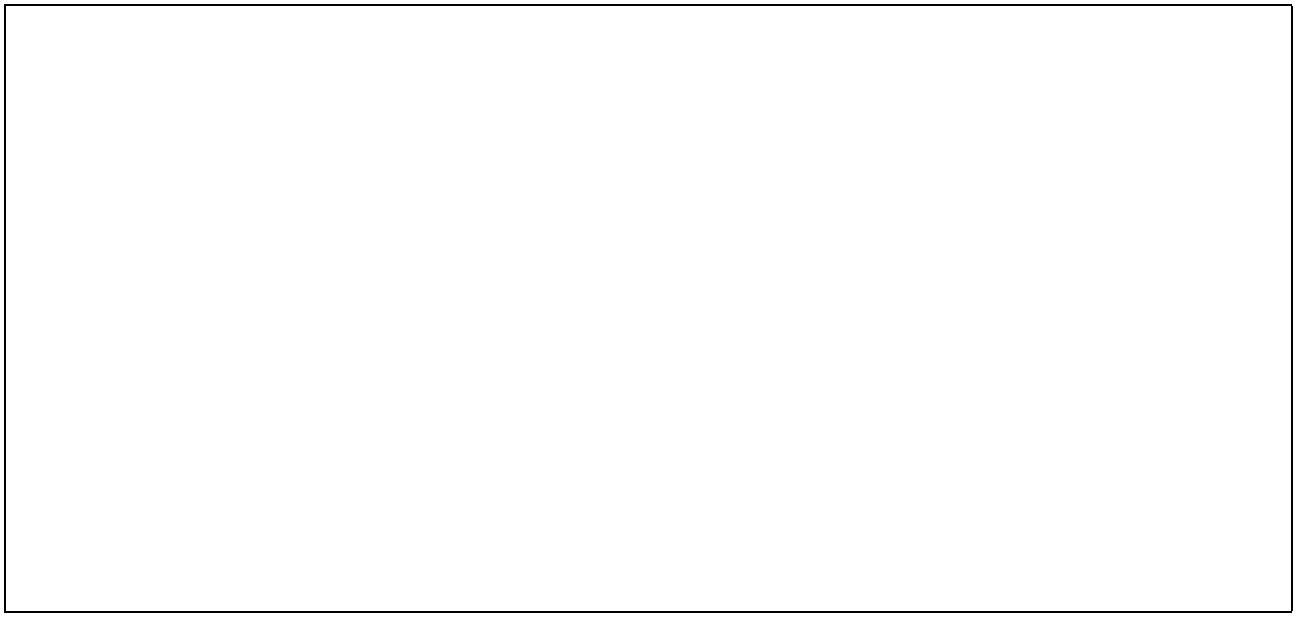
9 Possible displays.

9.1 No network connection.

9.2 Network connection is OK.

9.3 Maintenance warning.

10 “Stop-go” percentage



11 Fill level in chute.

12 Compression rollers: “0” indicates no motion, “1” indicates motion.

13 Solid arrow => material is being delivered.

14 Information line

15 Opening roller: “0” indicates no motion, “1” indicates motion.

16 Feed belt: “0” indicates no motion, “1” indicates motion.

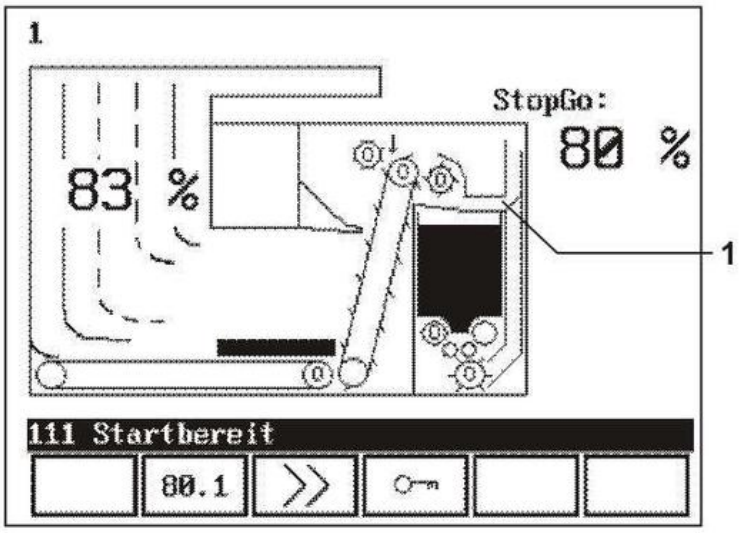
17 Symbol no longer displayed: The fill level is below the minimum acceptable level.

18 Symbol is displayed: The limit switch for monitoring the position of the retaining rake has been triggered, i.e. the material has not been compacted sufficiently.

19 Symbol no longer displayed: The dynamic storage unit fill level is below the minimum acceptable value.

UNImix B 72 / B 76 with R/S module (optionally with foreign fibre separator, as well)
This screen is displayed, if a foreign fibre separator is available.

1 Symbol for foreign fibre separator

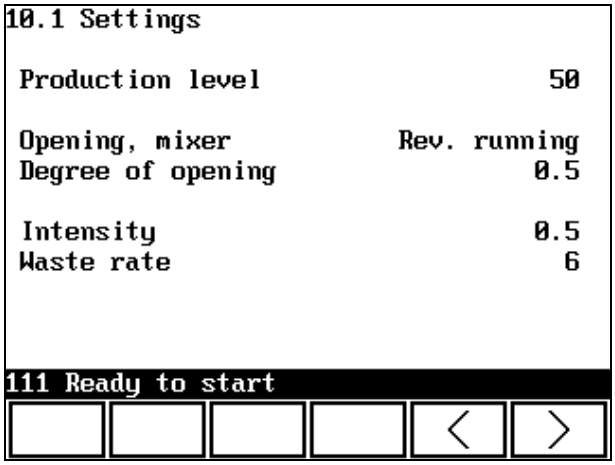


UNImix B 72 with R/S module and active bypassing
This screen is displayed, if the bypass feature is active.

1 If the bypass mechanism is activated, the opening roller, feed rollers and compression rollers are stopped.

3.4 Menu 10: "10 Production"

Contains all production data for the machine but not shift-related data.



10.1 Settings

Adjusting the grating (waste volume rate), Page 6/70

This screen only appears if the “VarioSet” programming option has been set in data screen 40.5.

Production level

Enter the required level. A higher value results in greater production and vice versa.

Default : 50

min. - max.: 20 (minimum production) - 100 (maximum production)

Fwd. running

When running in the forward direction, the opening roller conveys material in the same direction as the spiked lattice.

Results in coarser opening of material but a higher production rate.

min. - max.: 500 - 610 min-1

Rev. running

Results in finer opening of material but a lower production rate.

min. - max.: 70 - 150 min-1

Opening, mixer

The degree of opening is directly related to the distance between the spiked lattice and the opening roller.

0.1 => lowest possible degree of opening, greatest possible distance between the opening roller and the spiked lattice, large tufts, fully extended piston.

1.0 => highest possible degree of opening, smallest possible distance between the opening roller and the spiked lattice, small tufts, fully retracted piston.

Default : 0.5

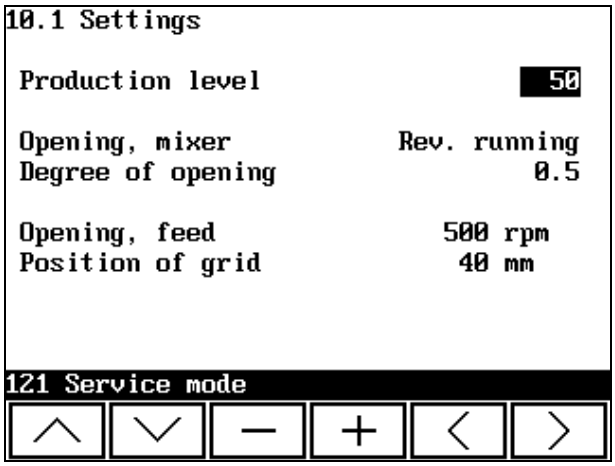
min. - max.: 0.1 - 1.0

Intensity

The degree of opening of the material is affected by the speed of the opening roller. (1.0 => highest degree of opening, i.e. highest speed of opening roller.)

Default : 0.3

min. - max.: 0.1 - 1.0



Waste rate

The type and volume of waste is affected by the grating setting. (10 => largest opening of the grating, and hence greatest volume of waste. The composition of the waste must be taken into account when making the setting.)

Default : 5

min. - max.: 1 - 10

10.1 Settings

Adjusting the grating (waste volume rate), Page 6/70

This screen only appears if the “VarioSet” programming option has not been set in data screen 40.5.

Production level

Enter the required level. A higher value results in greater production and vice versa.

Default : 50

min. - max.: 20 (minimum production) - 100 (maximum production)

Fwd. running

When running in the forward direction, the opening roller conveys material in the same direction as the spiked lattice.

Results in coarser opening of material but a higher production rate.

min. - max.: 500 - 610 min-1

Rev. running

Results in finer opening of material but a lower production rate.

min. - max.: 70 - 150 min-1

Opening, mixer

The degree of opening is directly related to the distance between the spiked lattice and the opening roller.

0.1 => lowest possible degree of opening, greatest possible distance between the opening roller and the spiked lattice, large tufts, fully extended piston.

1.0 => highest possible degree of opening, smallest possible distance between the opening roller and the spiked lattice, small tufts, fully retracted piston.

Default : 0.5

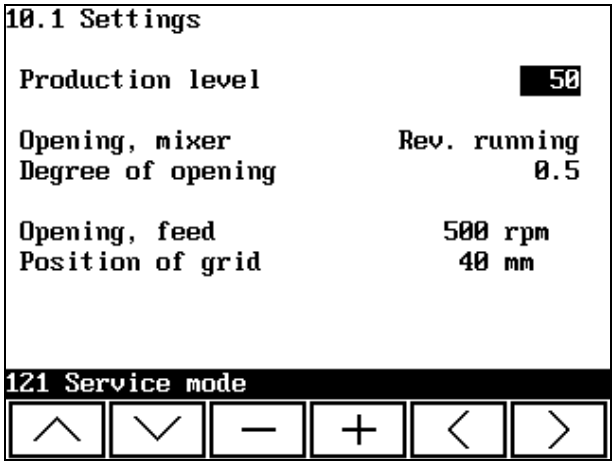
min. - max.: 0.1 - 1.0

Opening, feed

The speed of the opening roller can be altered with the PLUS and MINUS buttons.

Default : 600 min-1

min. - max.: 500 - 1000 min-1

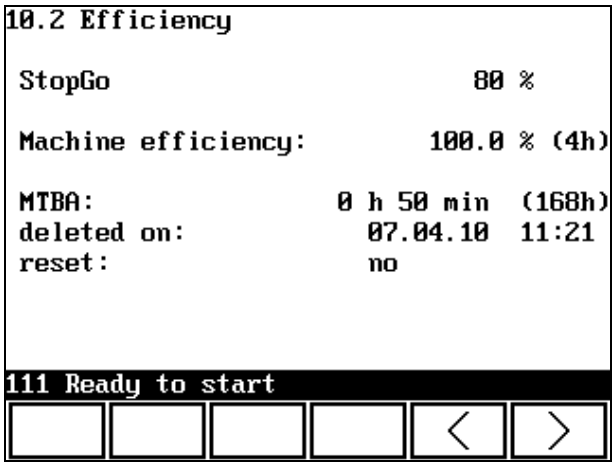


Position of grid

The type and volume of waste is affected. (Set the grating manually.)

Default : 55 mm

min. - max.: 5 - 100 mm



10.2 Efficiency

StopGo

The continuously-calculated percentage corresponding to the ratio of the total durations over which material is requested and is not requested, and based on the last 15 minutes at any given instant.

If the “stop-go” percentage is too low, the material delivery rate is too high. Reduce the production level.

☞ 10.1, Page 2/59

Machine efficiency:

Continuously-calculated machine efficiency. (Calculation period in hours indicated in brackets.)

MTBA:

The calculation is performed continuously over 7 days. During this time period, the normal running time is continuously compared with the number of faults and evaluated. (MTBA = Mean Time Between Assistance)

deleted on:

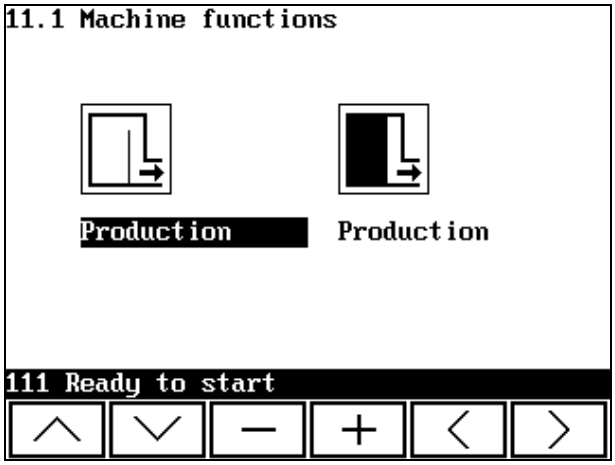
The date and the time indicate when the recording was last deleted.

deleted on:

Yes: The values are reset.

3.5 Menu 11: "11 Machine functions"

contains shift related production data, such as efficiency and production



11.1 Machine functions
Production
The machine is producing.

Machi. emptying

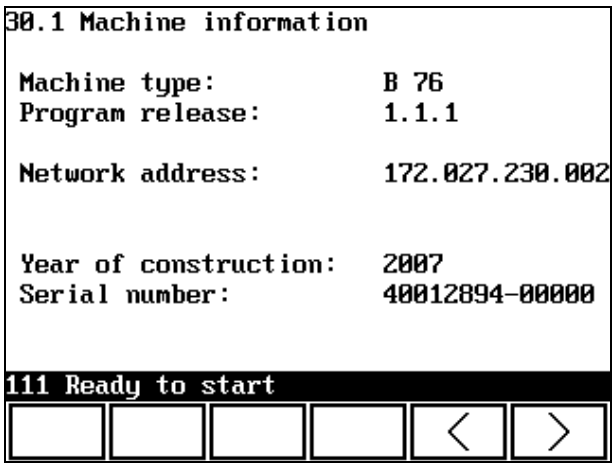
The machine can be emptied by activating this function.
The operating unit has a key which performs the same function.

Module emptying

The machine can be emptied by activating this function.
The operating unit has a key which performs the same function.

3.6 Menu 30: "30 Information, general"

Contains information on machine type, software release, statuses of the inputs and outputs.



30.1 Machine information
Information on the machine
Machine type:

Type designation based on the configuration in data screen 41.1.

Program release:

The program release used will be displayed.

Network address:

The network address for the corresponding machine is displayed.

If no network card is present, then the address “000” is displayed.

Year of construction:

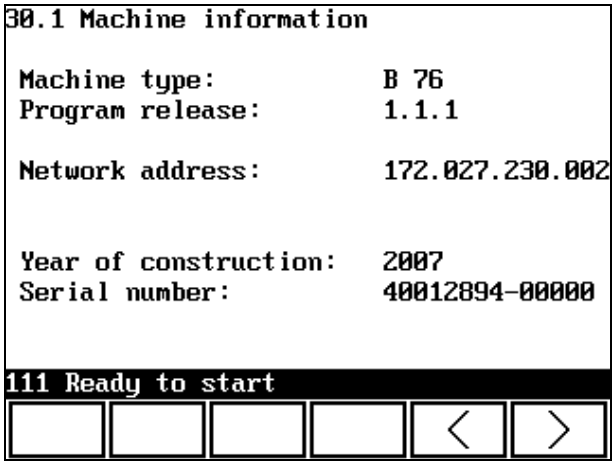
The year of construction for the machine is entered by Rieter prior to delivery.

Following a change of software, entries can only be made in “Service mode”, .

☞ 80.1, Page 2/70

Serial number:

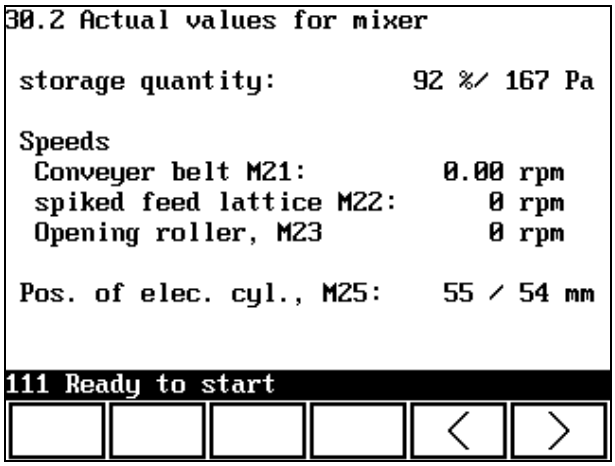
The serial number of the machine is entered by Rieter prior to delivery.



The serial number uniquely identifies a machine and is important for orders.

Following a change of software, entries can only be made in “Service mode”, .

☞ 80.1, Page 2/70



30.2 Actual values for mixer

Current values of various machine elements

storage quantity:

The current fill level of the storage unit (measured by pressure sensors).

100% => storage unit full

Speeds

Conveyer belt M21:

The speed is displayed in rpm.

spiked feed lattice M22:

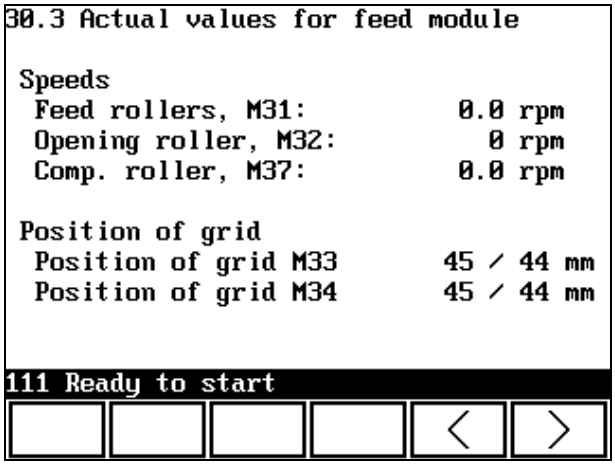
The speed is displayed in rpm.

Opening roller, M23

The speed is displayed in rpm.

Pos. of elec. cyl., M25:

The position of the electric cylinder is displayed in mm.



30.3 Actual values for feed module

Feed rollers, M31:

The speed of the feed rollers is displayed.

Opening roller, M32:

The speed of the opening roller is displayed.

Comp. roller, M37:

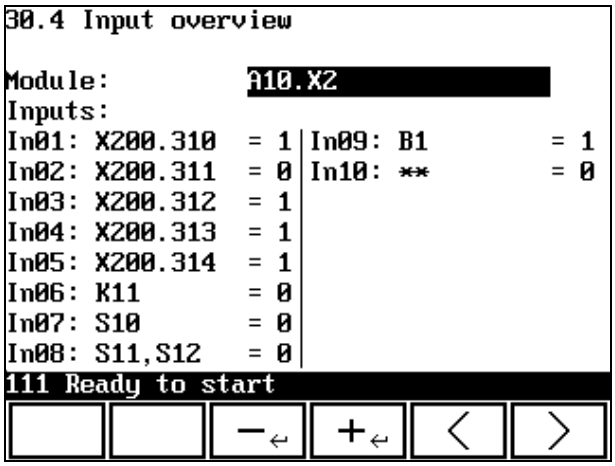
The speed of the compression rollers is displayed.

Position of grid M33

Left-hand side of machine: The position of the electrical-cylinder piston rod for setting the grating is displayed. (Current and target values.)

Position of grid M34

Right-hand side of machine: The position of the electrical-cylinder piston rod for setting the grating is displayed. (Current and target values.)



30.4 Input overview

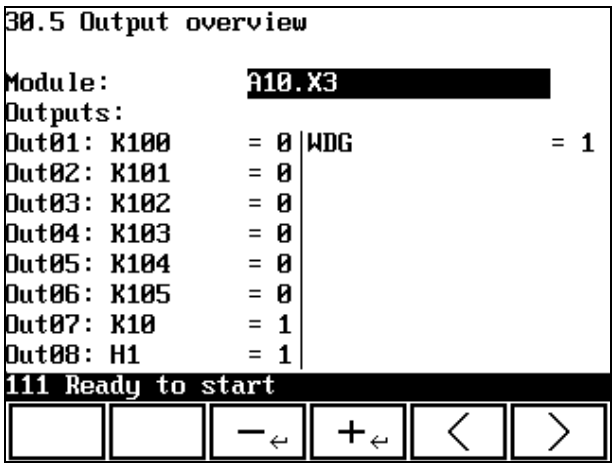
The status of each control unit input can be checked (“0” indicating no voltage and “1” indicating voltage is present) with this data screen.

Module:

Press the + or - keys to choose the I/O module, for which the statuses of the individual inputs are to be displayed.

Inputs:

For each input, the status “0” denoting “low” (no voltage present) or “0” denoting “high” (voltage present) is displayed.



30.5 Outputs:

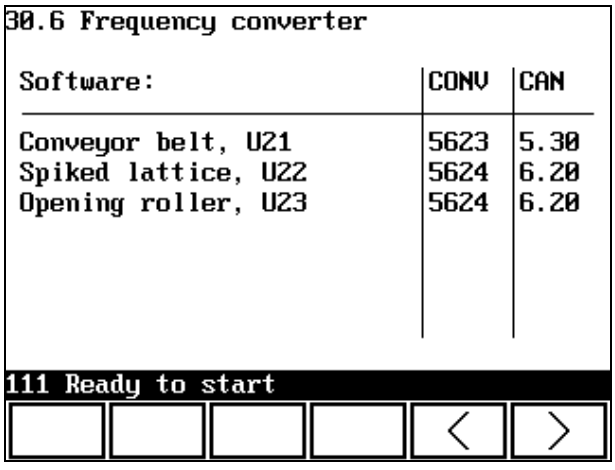
The status of each control unit output can be checked (“0” indicating no voltage and “1” indicating voltage is present) with this data screen

Module:

Press the + or - keys to choose the I/O module, for which the statuses of the individual outputs are to be displayed.

Outputs:

For each output, the status “0” denoting “low” (no voltage present) or “0” denoting “high” (voltage present) is displayed.



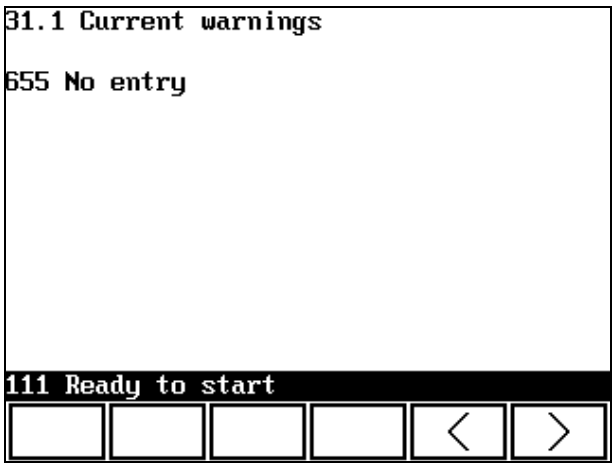
30.6 Frequency converter

Setting the T1000V frequency converter, Page 6/92

The software versions of the frequency converters and the CAN communications cards are displayed.

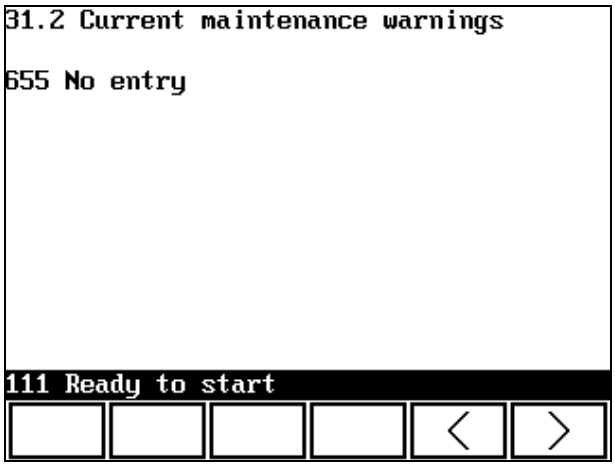
3.7 Menu 31: "31 Information protocols / statistics"

contains protocols and statistics



31.1 Current warnings

All current warnings are displayed chronologically with code, message text (summary) and date/time of occurrence.

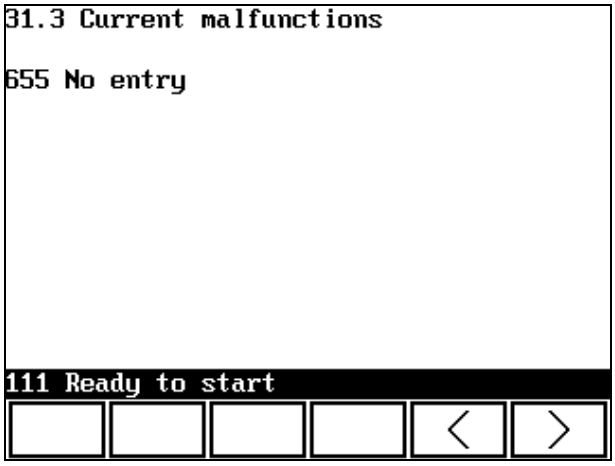


31.2 Current maintenance warnings

Currently pending maintenance warnings are displayed chronologically with code, message text (brief summary) and entry date/time. The machine production will not be interrupted.

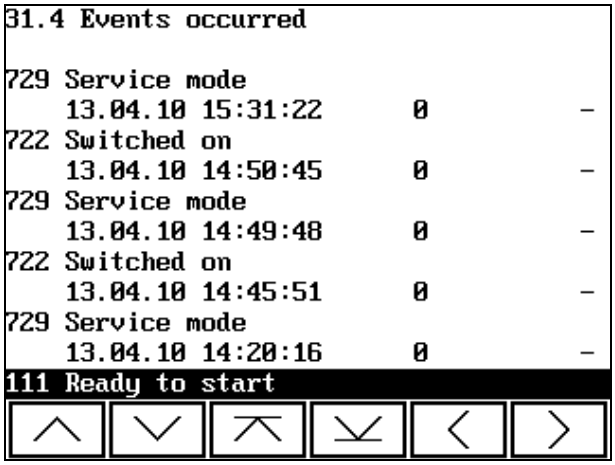
Deleting warnings

Warnings that are no longer pending are deleted automatically.



31.3 Current malfunctions

A maximum of 100 currently pending faults are displayed chronologically with code, text message (brief summary) and date/time of occurrence.

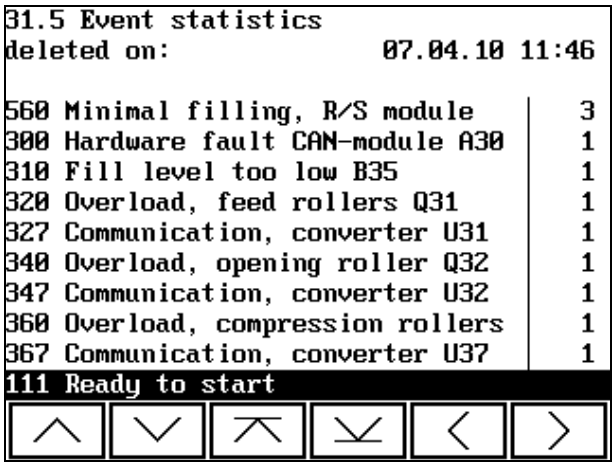


31.4 Events occurred

A maximum of 100 most recent events, such as faults, warnings, maintenance warnings, messages, etc., are displayed chronologically with code, message text (brief summary), entry date/time and duration (h:m:s).

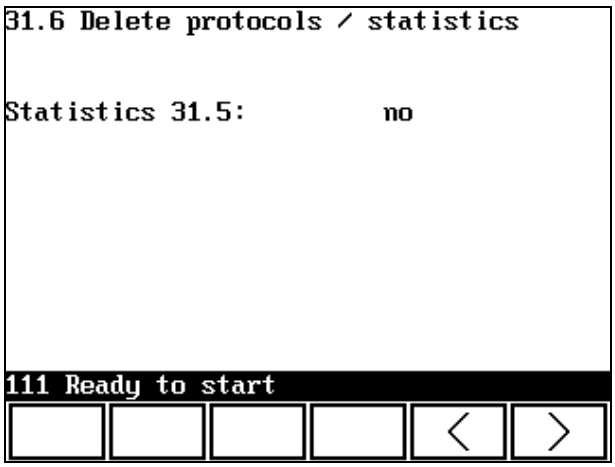
Entries

If 100 entries are recorded, the oldest entry will always be overwritten.



31.5 Event statistics

List of the most important events (alarms and messages) and information on how often these events have occurred. Only those events that have occurred at least once since the last delete are displayed. The entries in the events counter can be deleted in data screen 31.6.

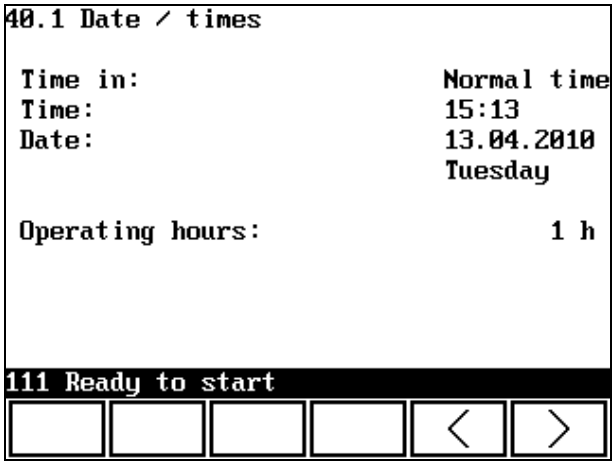


31.6 Delete protocols / statistics

Allows log files to be deleted in data screen 31.5.

3.8 Menu 40: "40 Setup values, general"

Furnishes settings, such as time, units, and languages.



40.1 Date / times

Changing from standard time to summer time , Page 2/36

Time in:

For switching between summer time and standard time

Time:

Enter hours/minutes

Date:

Enter day/month/year

Operating hours:

Setting the CPU operating hours counter, e.g. after replacing the CPU or a loss of data.

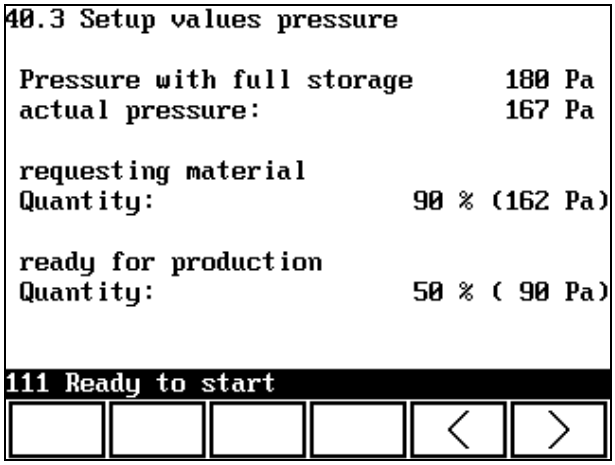
Following a change of software, entries can only be made in “service mode”, .

80.1, Page 2/70

40.2 Languages

Change the language, Page 2/28

The required languages are selected with "Yes". These languages can then be selected via the “LANGUAGE SELECTION” button. English and German cannot be deactivated.



40.3 Setup values pressure

Adjust the pressure sensor, Page 6/25

Pressure with full storage

Maximum fill level of the storage unit. If exceeded, the “Request Material” system signal is reset.

actual pressure:

Current pressure in the storage unit.

requesting material

Fill level, at which the machine again requests material. If the storage unit is full, the “Request Material” signal is reset.

100% => full storage unit

Default : 90 %

min. - max.: 50 - 99 %

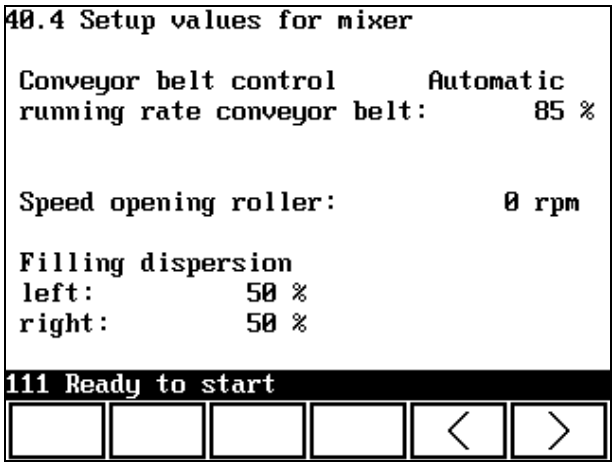
ready for production

Fill level, at which the machine can produce again (full storage unit). Only after the start procedure.

100% => full storage unit

Default : 50 %

min. - max.: 50 - 100 %



40.4 Setup values for mixer

Setting the distributor flap , Page 6/24

Conveyor belt control

Automatic

The ratio of the speeds of the feed belt and the spiked lattice is constant.

Default : 85 %

min. - max.: 75 - 90 %

Manual

The feed belt speed can be entered manually.

Default : 80 %

min. - max.: 5 - 100 %

Speed of the opening roller when running in the reverse direction

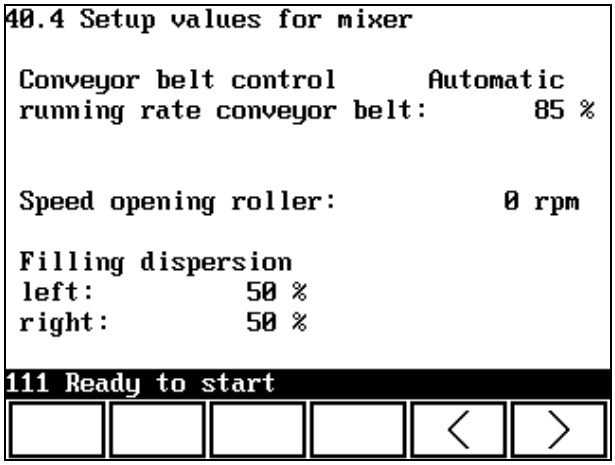
min. - max.: 70 - 610 min-1

Speed of the opening roller when running in the forward direction

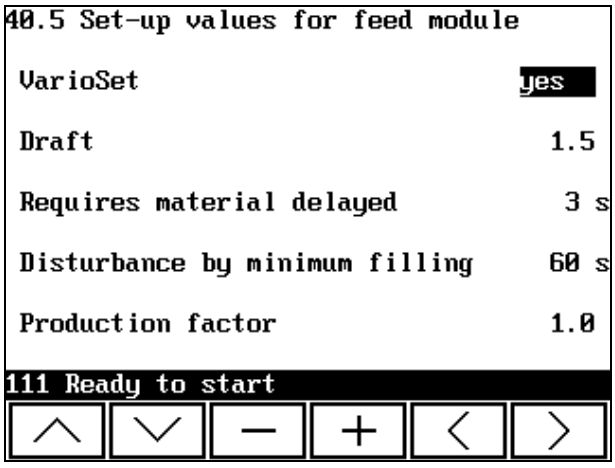
min. - max.: 70 - 610 min-1

Filling dispersion

right:



left:
The filling process can be affected on the right/left by the flap (relevant to the B 76 only).
Default : 50 %
min. - max.: 20 - 80 %



40.5 Set-up values for feed module

Light barriers, Page 6/50

VarioSet
Normally, VarioSet is used
“Yes”: VarioSet is active.
“No”: VarioSet is not active.

Draft
The draft between the compression rollers and the feed rollers can be adjusted.
Default : 1.5
min. - max.: 1.4 - 1.8

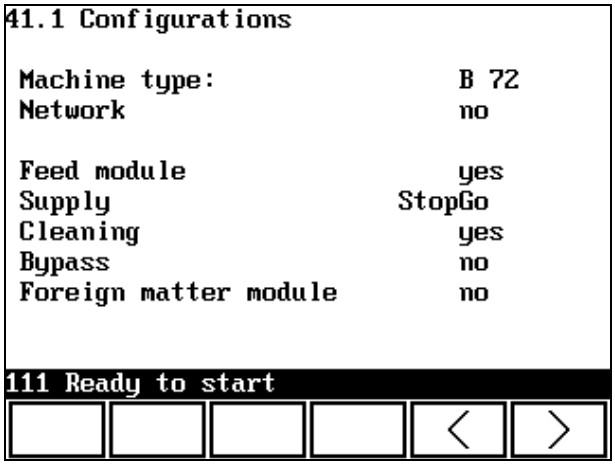
Requires material delayed
Default : 10 s
min. - max.: 1 - 100 s

Disturbance by minimum filling
Default : 60 s
min. - max.: 1 - 100 s

Production factor
In order to guarantee that the filling of the feed chute in the module is as uniform as possible, the production rate of the module can be increased or reduced if required. (Low value => reduced production rate for module.)
Default : 1.0
min. - max.: 0.5 - 2.0

3.9 Menu 41: "41 Setup values, configurations"

Configuration of the machine parameters.



41.1 Configurations

Changes are only possible in “Service mode”, data screen 80.1

Machine type:

Select the machine type according to the name-plate.

Network

Select “No”. (The machine is not connected to a network. No display on data screen 30.1.)

Select “Yes”. (The machine is not connected to a network. Display on data screen 30.1.)

The address is set at the control unit. The address can be seen in the electric circuit diagram. (Ether-net interface display on data screen 30.1.)

Feed module

Select “Yes”.

If “No”. is entered, the following text will not be dis-played.

Supply

Determine the type of machine control unit that controls the feeding of material to the next machine downstream.

StopGo

The feed rollers in the UNImix are switched on or off via a pressure switch in the downstream ma-chine. Select this type of machine control unit if the machine is not used for feeding the cards or for production rates of less than 300 kg/h.

4 levels

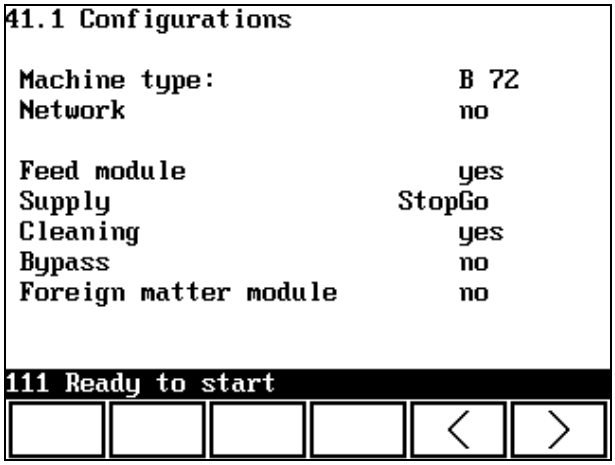
Select this type of machine control unit if the UNI-control is used as the control unit in the blow room.

The feed rollers are switched on or off via a pres-sure switch in the downstream machine and the se-lected production level..

☞ 10.1, Page 2/59

These signals are analysed. The machine produc-tion, for the selected production level, is adjusted so that the activation and deactivation of the feed roller is reduced to a minimum.

Calculations associated with this operating mode are carried out via the UNIcontrol.



Cleaning

“Yes”: The machine is equipped with a cleaning section in the vicinity of the opening roller.

“No”: The machine has no cleaning section in the vicinity of the opening roller.(This can only be bypassed using the system designed for this purpose.)

Bypass

“Yes”: Can be bypassed.

“No”: Cannot be bypassed.

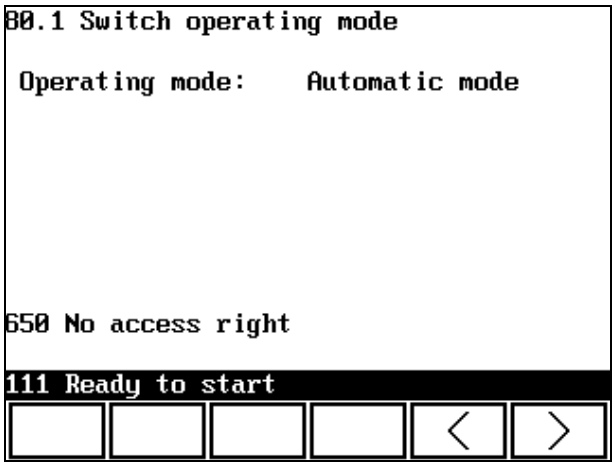
Foreign matter module

“Yes”: A module for detecting foreign matter is available.

“No”: There is no module for detecting foreign matter.

3.10 Menu 80: "80 Operating mode"

Change of operating mode for maintenance functions.



80.1 Switch operating mode

Performing service functions, Page 2/37

Selection of the operating mode. We distinguish between "Automatic mode" and "Service mode". The machine can be started for production in "Automatic mode". The "Service mode" is used for maintenance and machine testing purposes. "Service mode" has to be selected to permit access the other data masks for maintenance and tests.

Operating mode:

The following operating modes can be selected.

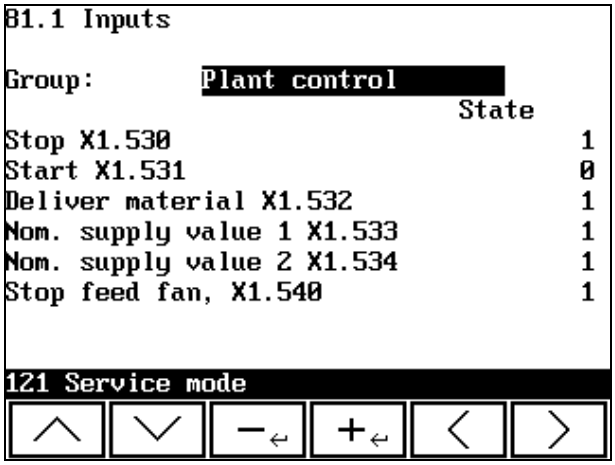
Selection

Service mode: This enables you to access all functions in the test menus.

Automatic mode: This allows just a few functions which eliminates potential risks in the automatic mode.

3.11 Menu 81: "81 IO tests"

The data screens in this menu allow the inputs and outputs of the control unit to be tested.



81.1 Inputs

Here the individual control unit inputs can be tested. The individual inputs must be activated externally, i.e. the elements must be operated manually. The designation numbers of the individual elements are found in the electrical documentation. Select the input to be tested. The status of the selected input is shown on the signal lamp. This allows a person to test an input, e.g. by covering the proximity switch.

Changes are only possible in “Service mode”, data screen 80.1

Group:

First, select the group to which the input to be tested is assigned.

Selection

Plant control
Machine
Mixer
Feed module
Bypass
Foreign matter module

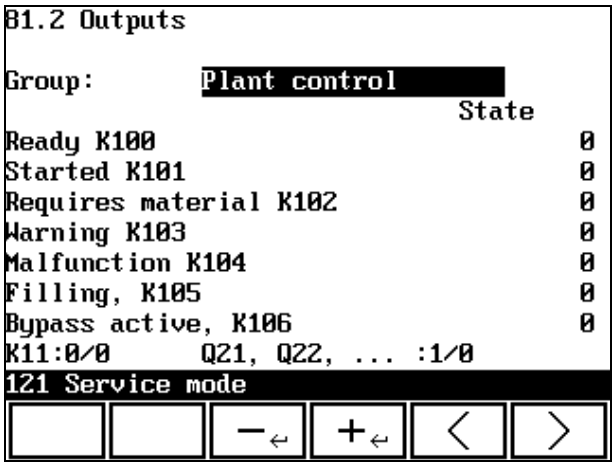
Inputs

Choose the input to be tested from the selected group.

State

“0” denotes “low”, i.e. there is no voltage present;

“1” denotes “high”, i.e. there is a voltage present.



81.2 Outputs

Here the individual control unit outputs can be tested. The outputs have been divided into groups. The relevant group is to be selected first, followed by the output to be tested. The status of the selected output is shown on the signal lamp. This allows a person to test an input. Switch off the motor protection switch device.

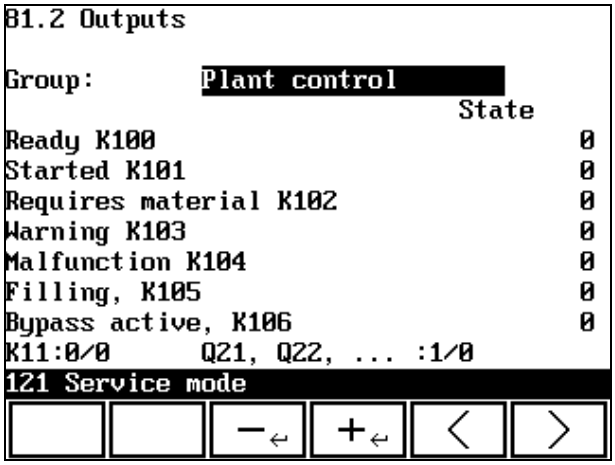
Changes are only possible in “Service mode”, data screen 80.1

Group:

First, select the group to which the output to be tested is assigned.

Selection

Plant control
Mixer
Feed module



Miscellaneous
Foreign matter module

Outputs:

Choose the output to be tested from the selected group.

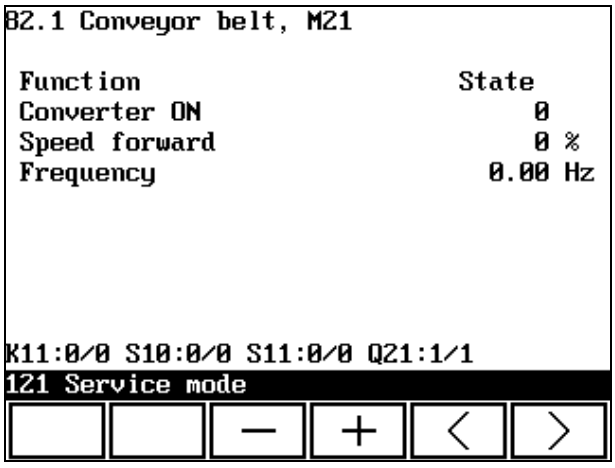
State

“0” denotes “low”, i.e. there is no voltage present;

“1” denotes “high”, i.e. there is a voltage present.

3.12 Menu 82: "82 Functional tests"

Allows for general function tests



82.1 Conveyor belt, M21

Performing service functions, Page 2/37

Changes are only possible in “Service mode”, data screen 80.1. The number on the information line indicates the current status of this element. The signals indicated on the information line must be correct.

Preparation

The emergency stop button has not been pressed.

The motor protection switch device is on.

The frequency converter has no faults.

The safety circuit must be active and closed.

Converter ON

Press the START button. The status changes to “1”. The frequency converter is ready to be started.

Speed forward

Use the “+”/“-” buttons to enter the speed as a percentage (%) of the maximum speed.

If the selected speed is adopted after pressing the START button, the motor will also start.

Frequency

The output frequency of the frequency converter is displayed.

The function and procedure, described in data screen 82.1, also apply to the following data screens.

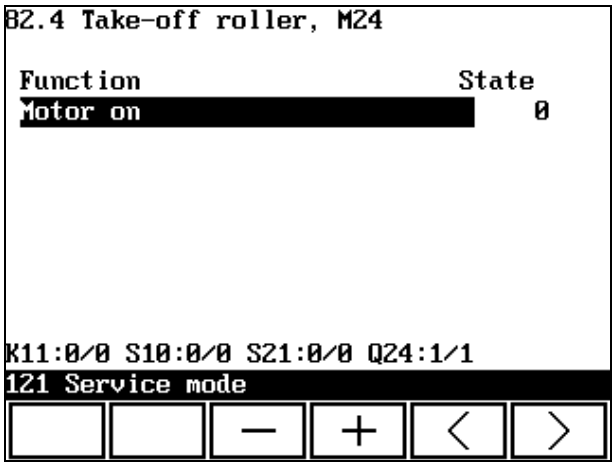
Spiked lattice, M22
Data screen 82.2

Opening roller, M23
Data screen 82.3

Compression roller M37
Data screen 82.7

Feed roller M31
Data screen 82.8

Opening roller M32
Data screen 82.9
No selection for direction of rotation



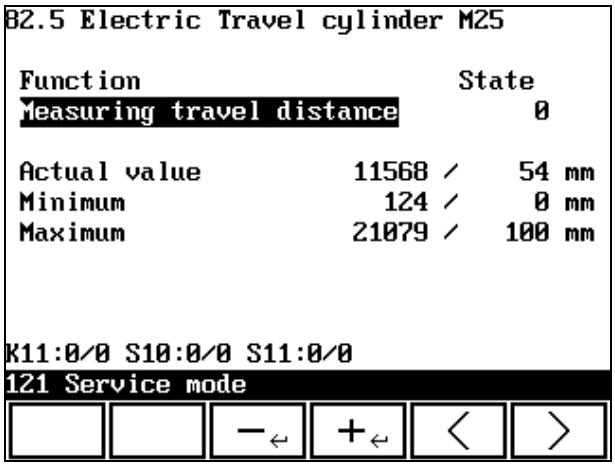
82.4 Take-off roller, M24
Changes are only possible in “Service mode”, data screen 80.1. The number on the information line indicates the current status of this element. The signals indicated on the information line must be correct.

Preparation
The emergency stop button has not been pressed.
The motor protection switch device is on.
The safety circuit must be active and closed.

Motor on
Press the START button. The status changes to “1”.

The function and procedure, described in data screen 82.4, also apply to the following data screens.

Feed fan
Data screen 82.6

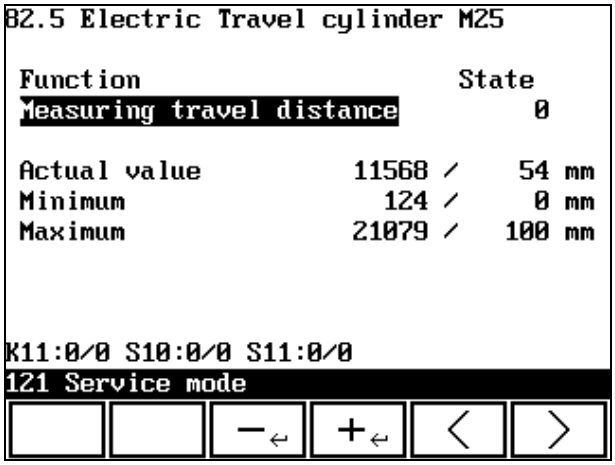


82.5 Electric Travel cylinder M25

Position of the opening roller to the spiked lattice (standard setting), Page 6/43

The emergency stop button has not been pressed. The safety circuit is closed. The first number on the information line indicates the current status of this element; the second number the target status. Changes are only possible in “Service mode”, data screen 80.1

This data screen also applies to the following elements.



Function

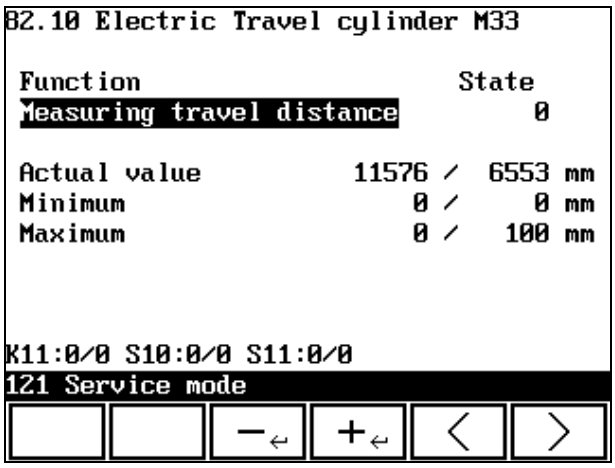
Selection

Measuring travel distance: Must be carried out after replacing the electric cylinder. After pressing the START button, the position detection of the electric cylinder is initialised. The piston rod is fully extended and retracted.

Middle position: After pressing the START button, the electric cylinder moves to the centre position.

extend: After pressing the START button, the electric cylinder extends.

retract: After pressing the START button, the electric cylinder retracts.



82.10 Electric Travel cylinder M33

Electric cylinder for the grating setting, Page 6/73

The emergency stop button has not been pressed. The safety circuit is closed. The first number on the information line indicates the current status of this element; the second number the target status. Changes are only possible in “Service mode”, data screen 80.1

Function

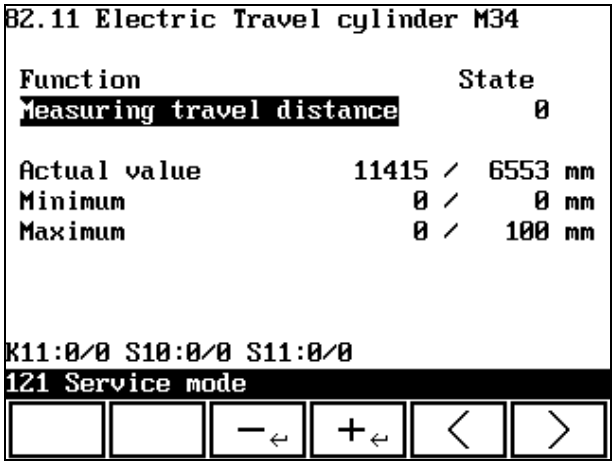
Selection

Measuring travel distance: Must be carried out after replacing the electric cylinder. After pressing the START button, the position detection of the electric cylinder is initialised. The piston rod is fully extended and retracted.

Middle position: After pressing the START button, the electric cylinder moves to the centre position.

extend: After pressing the START button, the electric cylinder extends.

retract: After pressing the START button, the electric cylinder retracts.



82.11 Electric Travel cylinder M34

Electric cylinder for the grating setting, Page 6/73

The emergency stop button has not been pressed. The safety circuit is closed. The first number on the information line indicates the current status of this element; the second number the target status. Changes are only possible in “Service mode”, data screen 80.1

Function

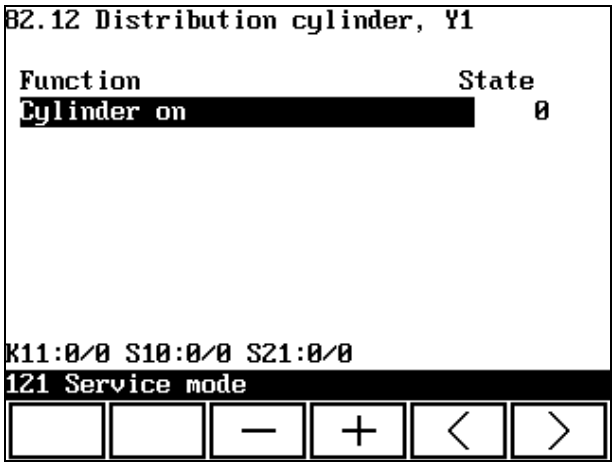
Selection

Measuring travel distance: Must be carried out after replacing the electric cylinder. After pressing the START button, the position detection of the electric cylinder is initialised. The piston rod is fully extended and retracted.

Middle position: After pressing the START button, the electric cylinder moves to the centre position.

extend: After pressing the START button, the electric cylinder extends.

retract: After pressing the START button, the electric cylinder retracts.



82.12 Distribution cylinder, Y1

Only applicable to B 76 machines

Changes are only possible in “Service mode”, data screen 80.1. The number on the information line indicates the current status of this element. The signals indicated on the information line must be correct.

Preparation

The emergency stop button has not been pressed.

The motor protection switch device is on.

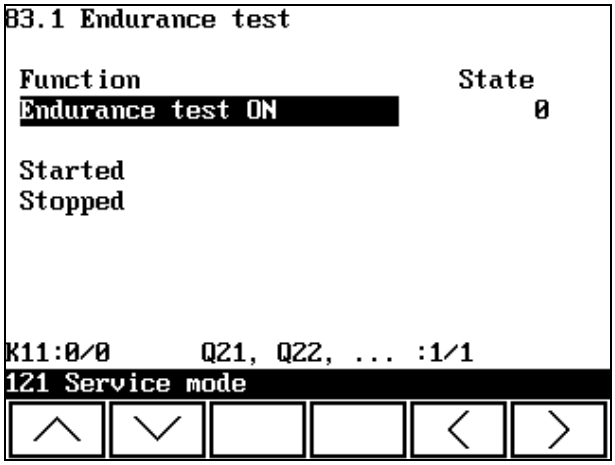
The safety circuit must be active and closed.

Cylinder on

Press the START button. The pneumatic cylinder is extended and retracted.

3.13 Menu 83: "83 Endurance test"

System tests, such as resetting all data to nominal values or activating a “cold start”.



83.1 Endurance test

This test is only required when carrying out the internal test procedure. All the drives are started simultaneously.

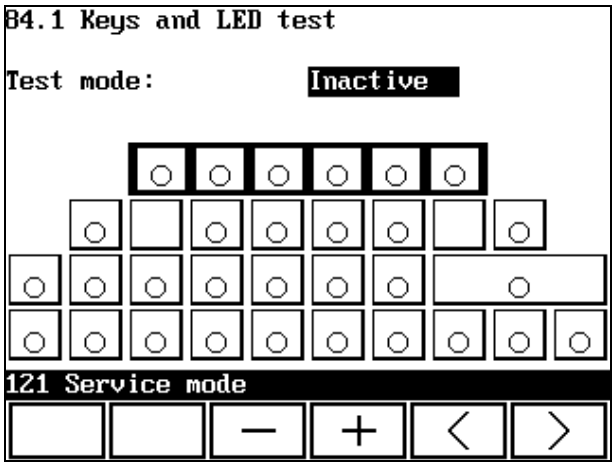
Changes are only possible in “Service mode”, data screen 80.1

Endurance test ON

The machine must be completely empty.

Perform the test using the START / STOP buttons.

3.14 Menu 84: "84 General test"



84.1 Push-button and LED test

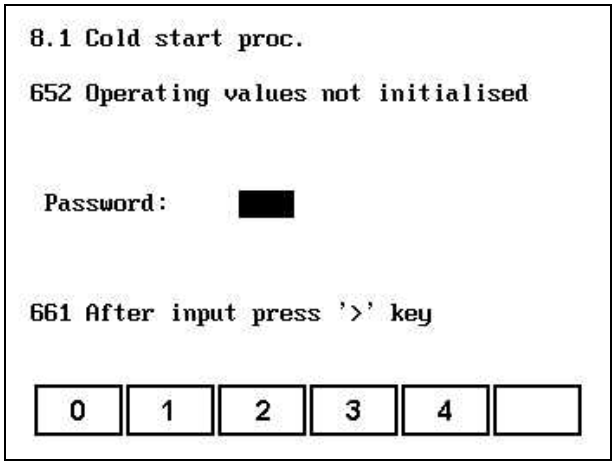
The push-buttons and LEDs can be tested in this data mask.

Test mode:

If the test mode is set to "active", all the LEDs on the operating unit light up.

The push-buttons on the operating unit can be tested in addition. If a push-button is pressed, the appropriate test mask has to react.

3.15 System functions



8.1 Cold start procedure

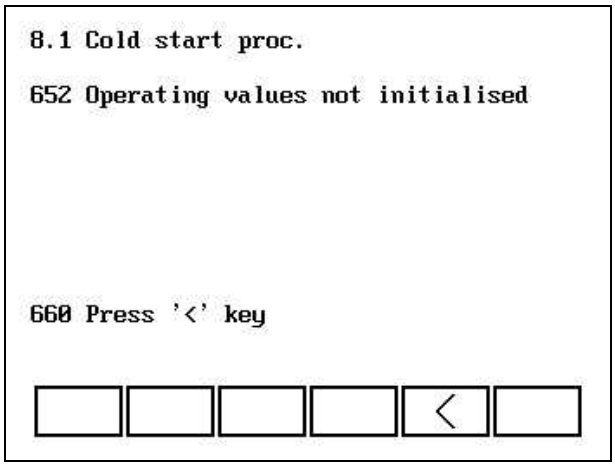
This mask appears on first commissioning, possibly following a software upgrade, if the data in the memory were erased or if an intentional cold-start was initiated. First enter the password. You will then be guided through all the necessary data masks in which settings must be defined or checked,.

Password:

Enter the appropriate 4-digit password using the soft keys 0-4.

Then press the ">" key to go to the next mask.

Note: Press the "C" key to delete the password code and re-enter it.

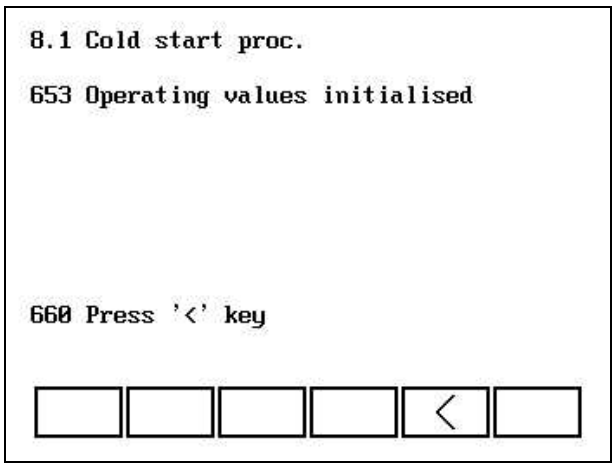


8.1 Cold start procedure

This mask appears after password entry.

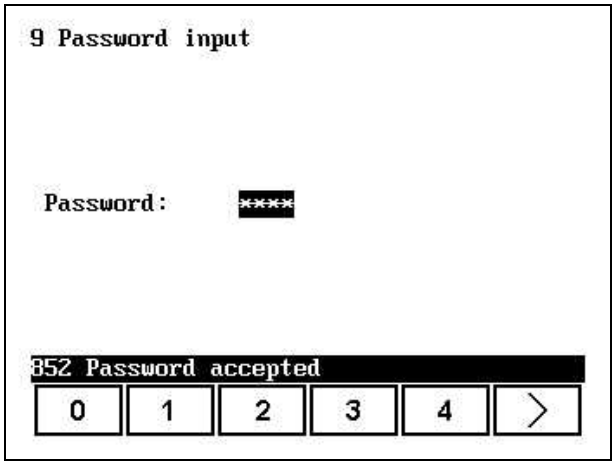
660 press the "<" key

If you press the "<" key, you will be guided through all the data masks in which the user has to make entries.



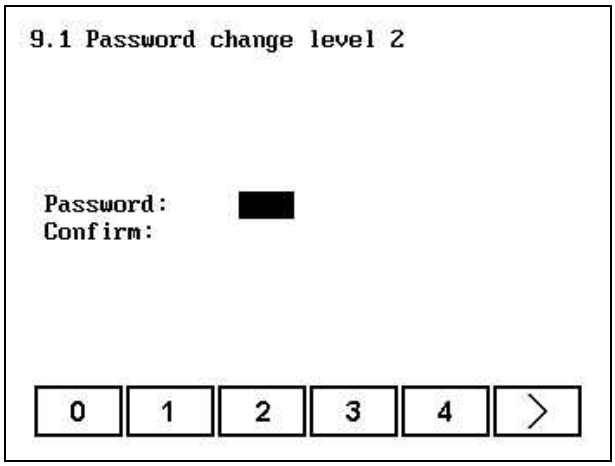
8.1 Cold start procedure

This mask appears at the end of the cold start process, after you have been taken through all the settings. Follow the instructions in the lowermost line to be able to start the machine afterwards.



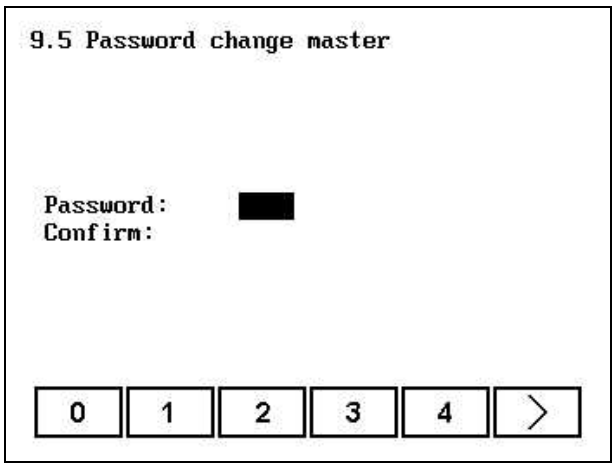
9 Password entry

Certain entries and tests are possible in data masks only if the password has been entered previously. (Soft key "Key in basic mask).



9.1 Password change level 2

A new password can be assigned in this data screen. If several passwords (“S2 to S3”) have been assigned, several data screens will appear (9.2 to 9.x).



9.5 Password change Master

A new master password may be assigned on this mask.

Part 3

Setting up, preparing, adjusting

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1 Explanation on this section of the operating instructions

What is Part 3 for?

Part 3 contains checklists and tables relevant to potential tasks, such as settings, optimisation, etc.

These checklists provide an overview of all tasks that have to be carried out, such as changing to a different type of material, for instance.

What information is contained in Part 3?

The checklists contain all the work instructions on various work situations, with reference to the relevant tables and detailed work descriptions.

When do you need to consult Part 3?

If the machine or plant has to be set up.

If there is a material change.

If the quality or productivity is to optimised.

If work needs to be carried out on certain components.

2 Machine set up; optimise settings

2.1 Settings

2.1.1 Air conditions

– Set the air conditions.
  ☞ Setting suction values, Page 6/10

2.1.2 Standard mechanical configuration

– After a machine part has been replaced, the default settings need to be re-configured.
  ☞ Adjusting the distance between the conveyor belt and the spiked lattice (standard setting), Page 6/21
  ☞ Tension the spike lattice, Page 6/37
  ☞ Tighten the toothed belt drive of spiked lattice, Page 6/39
  ☞ Position of the opening roller to the spiked lattice (standard setting), Page 6/43
  ☞ Tighten the V-belt, Page 6/46
  ☞ Position of the opening roller to the spiked lattice (standard setting), Page 6/43
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2.2 Production is not reached

2.2.1 Check settings

– Match the opening of the material to the production
  ☞ Stop production, Page 6/44
– Check the tension and running of the conveyor belt
  ☞ Tension conveyor belt, Page 6/19
  ☞ Aligning the conveyor belt, Page 6/20
– Check filling of the storage area.
  ☞ Adjust the separating vanes, Page 6/27

2.2.2 Storage bin not adequately filled

– Adjust the separating vane correctly.
  ☞ Adjust the separating vanes, Page 6/27
– Check the pressure conditions at the material feed and at the exhaust air.
  ☞ Exhaust air, Page 6/28
– Check the setting of the pressure sensor.
  ☞ Adjust the pressure sensor, Page 6/25

2.3 Blockages in the machine

2.3.1 Irregular material layers.

– Check the material layers. They can be seen in the window of the service door on the left side of the machine.

– Check the settings of the separating vanes.
☞ Adjust the separating vanes, Page 6/27

– Check the vacuum in the area of the exhaust air.
☞ Exhaust air, Page 6/28

– Check the fill height.

– Check the material opening and the production.
☞ Stop production, Page 6/44

2.3.2 Malfunctions in filling and emptying of the machine

– Check the adjustment of the stripper comb
☞ Adjust the stripper rake, Page 6/31

2.3.3 Opening secured windows

– The safety screws will be permanently damaged when removing a secured window. Use new safety screws, when re-fitting the window.
☞ Removing the windows, Page 6/9

2.4 Material transport in the storage area

2.4.1 Conveyor belt is not running properly

– Tension the conveyor belt
☞ Tension conveyor belt, Page 6/19

– Align the conveyor belt
☞ Aligning the conveyor belt, Page 6/20

– Tighten the drive chain of the conveyor belt
☞ Tightening the chain, Page 6/22

– Conveyor belt is defective
☞ Removing the conveyor belt, Page 6/14
☞ Installing the conveyor belt, Page 6/16

– The cleaning unit for the conveyor belt is not cleaning correctly. Adjust or replace the cleaning unit.
☞ Setting the cleaning unit for the conveyor belt, Page 6/18

2.5 Storage not adequately filled

2.5.1 Settings

– Adjust the separating vane correctly.
☞ Adjust the separating vanes, Page 6/27

– Check the pressure conditions at the material feed and at the exhaust air.
☞ Exhaust air, Page 6/28

– Check the setting of the pressure sensor.
☞ Adjust the pressure sensor, Page 6/25

– Set the distributor flaps.
☞ Setting the distributor flap , Page 6/24

2.6 Open transfer

2.6.1 Exhaust air

– Cone tube
☞ Exhaust air, Page 6/28

2.7 Dynamic storage unit at spiked lattice

2.7.1 Settings

– Make the fill height and fill quantity settings for the dynamic storage unit.
☞ Making fill height and fill quantity settings for the dynamic storage unit, Page 6/29

2.8 Delivery section

2.8.1 Spike lattice

– Replace the spiked lattice
  ☞ Remove the spiked lattice., Page 6/32
  ☞ Install the spiked lattice, Page 6/34

– Install the drive unit for the spiked lattice according to specifications.
  ☞ Drive unit for spiked lattice, Page 6/38

– Check the slide elements for the spiked lattice. Replace, if necessary.
  ☞ Checking slide elements, Page 6/35

– Fasten the guide rails in the correct position.
  ☞ Fastening guide rails, Page 6/36

2.8.2 Spike(s) of lattice

– Replace individual spiked bars
  ☞ Remove the spike lattice., Page 6/41
  ☞ Install spike lattice, Page 6/42

2.8.3 Take-off roller

– Whenever the take-off roller is removed, the bearing races have to be positioned correctly.
  ☞ Positioning the ball bearing races for the take-off roller, Page 6/47

2.9 Feed chute

2.9.1 Material height

– The material height in the feed chute is too high or too low.
  ☞ Light barriers, Page 6/50

2.9.2 Material feed for the module

– The material feed to be opened and cleaned by the module must be adjusted according to the material that is to be processed. If the material feed is too heavy, then this will adversely affect the running behaviour of the module.
  ☞ Setting the feed chute walls, Page 6/51

2.10 R/S module

2.10.1 Opening roller

– Remove the opening roller
  ☞ Removing the opening roller, Page 6/65
– Install the opening roller
  ☞ Installing opening roller, Page 6/67
– Tighten the toothed belt
  ☞ Controlling and tightening toothed belts, Page 6/68
– Correctly set the proximity switch.
  ☞ Proximity switch for ascertaining the speed of the opening roller, Page 6/69

2.10.2 Feed rollers

– Set the distance between the feed roller and the opening roller. (Adapted to an individual assortment.)
  ☞ Adjusting the distance between the feed and opening rollers, Page 6/64
– Remove the feed roller.
  ☞ Removing feed roller, Page 6/59
– Install the feed roller.
  ☞ Installing the feed roller, Page 6/61
– Tighten the chain.
  ☞ Tighten chain, Page 6/63

2.10.3 Compression rollers

– Remove the compression rollers
  ☞ Removing the compression roller, Page 6/53
– Install the compression roller.
  ☞ Installing the compression roller, Page 6/56

2.10.4 Grating

– Adjust the waste flow rate.
  ☞ Adjusting the grating (waste volume rate), Page 6/70
– Set the home position for the newly-fitted lifting rod following replacement.
  ☞ Electric cylinder for the grating setting, Page 6/73
– Setting the waste flap
  ☞ Setting the waste transport flap, Page 6/74

2.10.5 Differential pressure switch

– Set the minimum vacuums for waste extraction and material delivery.
☞ Differential pressure switch, Page 6/52

2.11 Loading software

New software must be loaded. For example, if the operating unit (which also contains the control unit) of another machine has been installed, or if a new version is to be loaded.

2.11.1 Software

– Load software on to the control unit.
☞ Software exchange between memory card and control system, Page 6/81

2.12 Replacing the operating unit (including the control unit)

2.12.1 Removal

– Remove the operating unit.

– Remove the keyboard strip.

2.12.2 Installation, adding equipment

– Insert the keyboard strip into the operating unit, that is to be installed.
☞ Change keyboard strip, Page 6/99

– Install the operating unit and make connections according to the diagrams and electrics documentation.
☞ Inserting the modules and plugs on the operator panel, Page 6/97

– Load software on to the control unit.
☞ Software exchange between memory card and control system, Page 6/81

2.12.3 Configuration

– Set the terminating resistor
☞ Setting or wiring in the terminating resistors for the CAN-Bus., Page 6/94

– Setting the node address
☞ Set the CAN node address of the CAN I/O module CX408, Page 6/96

– Setting the IP address for the SPIDERweb option
☞ Setting the IP address, Page 6/83

2.12.4 Display brightness

– Make setting.
☞ Adjusting the contrast on the display unit, Page 6/98

2.13 Working with the BuR basic module

2.13.1 Basic module

– Perform a cold start
  ☞ Carrying out a cold start, Page 6/79

2.13.2 Working with parts of the basic module

– Change the battery
  ☞ Removing the battery from the control system, Page 6/80
  ☞ Mounting the battery in the control system, Page 6/80
  ☞ Change battery of control system, Page 6/80
– PCMCIA data storage card
  ☞ Switch off write protection, Page 6/83
  ☞ Software exchange between memory card and control system, Page 6/81
– Set IP address for Ethernet interface
  ☞ Setting the IP address, Page 6/83

2.14 Replace the frequency converter

2.14.1 Equipment

– The device must be equipped with the relevant components.
  ☞ Identifying the frequency converter, Page 6/84
  ☞ Equipping the frequency converter, Page 6/89
  ☞ Adapting to the cooling system, Page 6/91

2.14.2 Configuration

– The components must be configured appropriately.
  ☞ Configuring the frequency converter, Page 6/90
  ☞ Setting the T1000V frequency converter, Page 6/92

2.15 CAN node module

2.15.1 Switch settings

– Make settings
  ☞ Set the CAN node address of the CAN I/O module CX408, Page 6/96

2.16 Decommissioning

2.16.1 Measures to be taken

– Bring the machine into its secure state.

– Disconnect the power supply.

– Protect the machine against unauthorized use.

– Secure the machine so that no one is placed at risk during the shutdown period.

– Protect the machine against contamination and corrosion.

2.17 Recommissioning

2.17.1 Measures to be taken

– Check all safety-relevant elements for proper functioning.

2.18 Disposal of Waste

2.18.1 Accident Prevention

Note: see "Workplace Safety" in Section 1

– The regulations relating to workplace safety must be absolutely complied with!

2.18.2 Operating Materials

– Ensure proper disposal of operating materials. Drain oil, coolant, etc.

2.18.3 Dismantling

Note: The following procedures may be done by trained specialists only who are familiar and comply with the general safety regulations (see Section 1 and 6).

– The machine must be dismantled into units that can be safely transported.

– Hazardous machine parts that pose a risk during transport must be dismantled and safely packed.

Part 4

Maintenance

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3	Explanations for maintenance and intervals	4 / 5
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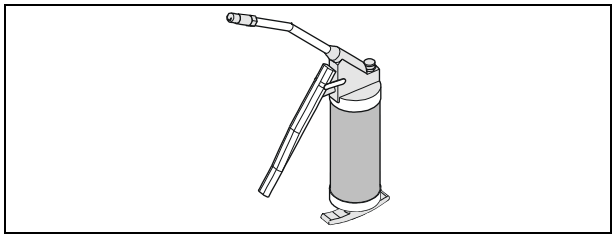
8 Lubrication points . . . . . 4 / 25

1 Overview of special tools



Grease gun

Lubrication of lubricating nipple

Capacity per pump stroke	0.333 cm³

Note: The capacity without counter-pressure is 0.5 cm³

2 Safety precautions

2.1 Safety precautions during cleaning work

Safety precautions

Switch off main switch Q10 and secure with padlock.

All jobs requiring these security measures are indicated by an appropriate symbol on the particular page.

Inflammable fuel

If inflammable cleaning agents are used in the spinning mill, their flash point should be above 55ºC.

2.2 Safety precautions during lubrication

Remove any drops of oil and other lubricants on the floor immediately to prevent all risk of slipping and falling.

3 Explanations for maintenance and intervals

Maintenance necessity

Periodic maintenance is a prerequisite for long life time.

Periodic maintenance avoids unnecessary down time.

Maintenance targets

To keep equipment in good conditions with a minimum of problems .

To avoid interruptions by preventing measures

Pay backs of organised maintenance

Maintenance may be scheduled and labour requirements anticipated

Not sufficient maintenance or poorly organised maintenance:

Problems will arise at any time, avoidable loss of production will be encountered

Correct cleaning procedures

Cleaning must be done in a timely manner and at the right place

Correct lubrication procedures

Lubrication procedures must be done in a timely manner with proper lubricant at the right place and in the right amount

To be able to lubricate properly it is necessary to have good equipment and exact operational scheduling

Preparations require that machines and equipment are in appropriate conditions

Personnel must be trained and familiar with the task on hand.

Adapt maintenance schedules to operating conditions

Maintenance schedules depend upon material, trash content, air condition, and operating conditions

The recommended maintenance schedules are mere proposals to be changed according to local conditions

Intervals

There are intervals which are valid either only once or at cyclical intervals

The unique ones are only to be used after the first installation and start-up. This can apply to the whole machine or to an individual element. For example, should a newly fitted belt needed to be re-stretched after a certain running time.

Cyclical tasks must be performed repeatedly.

For example, after a running time of 660 hours, the 165, the 330 and the 660 maintenance work must be carried out.

In 3 shift operation, the following intervals correspond to the quoted times.

165 operating hours = 1 week

330 operating hours = 2 weeks

660 operating hours = 4 weeks

2000 operating hours = 3 months

4000 operating hours = 6 months

8000 operating hours = 12 months

Maintenance planning

The maintenance schedule serves as overview for this.

The maintenance schedule is given in tabular form and lists the intervals at which the different maintenance work is required.

The maintenance plan permits a detailed customer-specific maintenance schedule to be drawn up.

The work description is referenced for each piece of maintenance work.

For service specialists who carry this work out on a routine basis, this need to refer to a work description is no longer necessary.

The tabulated column "Values" gives the service specialist details of the lubrication points.

The tabulated column "Values" contains a summary of the most important data on the corresponding lubrication points.

1. Location designation of the lubrication points
2. Number of lubrication points, for example the number of lubricating nipples = 8.
3. Lubricant information, e.g. EP2
4. Lubricant type, e.g. "grease"
5. Lubricant quantity, e.g. 3 pump strokes per lubricating nipple.

4 Maintenance schedule

4.1 UNImix

Interval 165 Operating hours (Cyclic, repeat regularly):

Component name	Task	Values	See
Frame and casing	Cleaning the collecting duct		4/12
Frame and casing	Inspect and clean storage area and rollers.		4/13

Interval 2000 Operating hours (Cyclic, repeat regularly):

Component name	Task	Values	See
Conveyor belt	Tension conveyor belt		6/19
Conveyor belt drive	Tightening the chain		6/22
Separating vanes	Clean the separating vanes		4/14
Spike lattice	Tension the spike lattice	Distance between centres: *Distance between centres "A": Upright lattice tension 0.0 %* = 2483.0 mm *Distance between centres "A": Upright lattice tension 0.5 %* = 2495.0 mm *Distance between centres "A": Upright lattice tension 0.8 %* = 2502.0 mm	6/37
Spike lattice	Checking slide elements		6/35
V-belt	Tighten the V-belt		6/49
UNImix	Lubricating bearings and chains	Opening roller, 2 EP 2, Grease, 3 pump strokes ☞ UNImix, Location number: 1, Page 4/25	4/15
		Take-off roller, 2 EP 2, Grease, 3 pump strokes ☞ UNImix, Location number: 3, Page 4/25	4/15
		Conveyor belt chain, 1 CC320, EP oil, heavy, Lightly coat ☞ UNImix, Location number: 5, Page 4/25	4/15
		Conveyor belt chain, 1 S 21, Chain spray, Lightly spray ☞ UNImix, Location number: 5, Page 4/25	4/15
Frequency converter	Cleaning the housing of the frequency converter		4/16

Interval 4000 Operating hours (Cyclic, repeat regularly):

Component name	Task	Values	See
Frequency converter	Regenerating the replacement frequency converter		6/84

Interval 32000 Operating hours (Cyclic, repeat regularly):

Component name	Task	Values	See
UNImix	Changing lubricant for gear motors	Gear motor for spiked lattice, 1 CC220, EP oil, 180 cm³ ☞ UNImix, Location number: 2, Page 4/25	4/17
		Gear motor for conveyor belt, Pre-stage gearbox, “a” S 26, Low-viscosity gearing grease, 175 g ☞ UNImix, Location number: 4, Page 4/25	4/17
		Gear motor for conveyor belt, Main gearbox, “b” S 26, Low-viscosity gearing grease, 600 g ☞ UNImix, Location number: 4, Page 4/25	4/17
Frequency converter	Replacing the frequency converter		6/85

4.2 R/S module

Interval 2000 Operating hours (Cyclic, repeat regularly):

Component name	Task	Values	See
R/S module	Lubricating chains (R/S module)	Chains for drives, . S 21, Chain spray, Lightly spray ☞ R/S module, Location number: 1, Page 4/26	4/18
		Chains for drives, . CC320, EP oil, heavy, Lightly coat ☞ R/S module, Location number: 1, Page 4/26	4/18

Interval 32000 Operating hours (Cyclic, repeat regularly):

Component name	Task	Values	See
R/S module	Change of lubricant in gear motors (R/S module)	Pre-stage gearbox, a S 26, Low-viscosity gearing grease, 0.175 l ☞ R/S module, Location number: 2, Page 4/26	4/19
		Main gearbox, b S 26, Low-viscosity gearing grease, 0.6 l ☞ R/S module, Location number: 2, Page 4/26	4/19

5 Cleaning / Lubrication

Purpose of cleaning

Regular maintenance and constant cleaning of the machine contribute towards trouble-free operation.

Use of cleaning agents

Natural residue from cotton, such as honeydew, is best cleaned off with a cleaning rag and hand-warm water.

Residue from lubricants and deposits from synthetic fiber material are best cleaned with a solvent that does not attack rubber and paint. e.g. use cleaning alcohol or water with a grease-dissolving general-purpose cleaner

Use a high-powered industrial vacuum cleaner to remove dust and fly. The suction nozzle must be fitted with a plastic tip.

After cleaning, the least volatile cleaning agents such as kerosine, white spirit, must be blown out of the anti-friction bearings, using clean compressed air and without rotating the bearing.

Caution

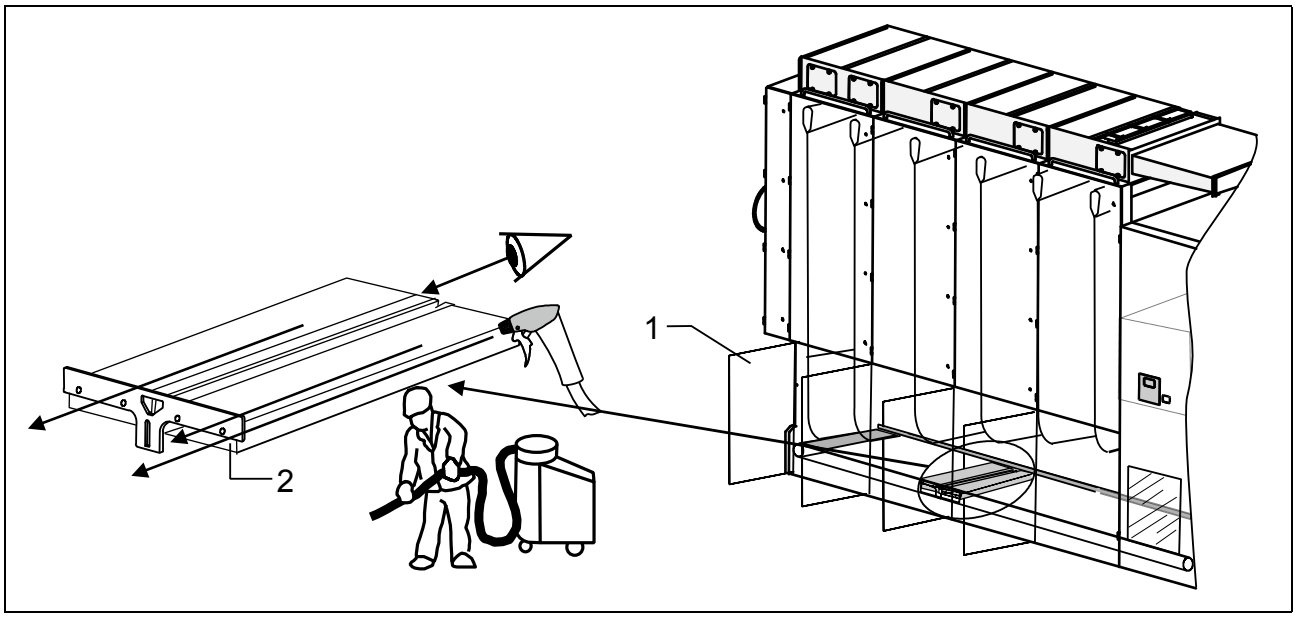
Unauthorised conversions or modifications are not allowed, as there is then no guarantee that the machine will function correctly.

5.1 UNImix

5.1.1 Interval 165 Operating hours (Cyclic, repeat regularly):

5.1.1.1 Cleaning the collecting duct

WARNING
Set the main switch to the “off” position and secure it with a lock.

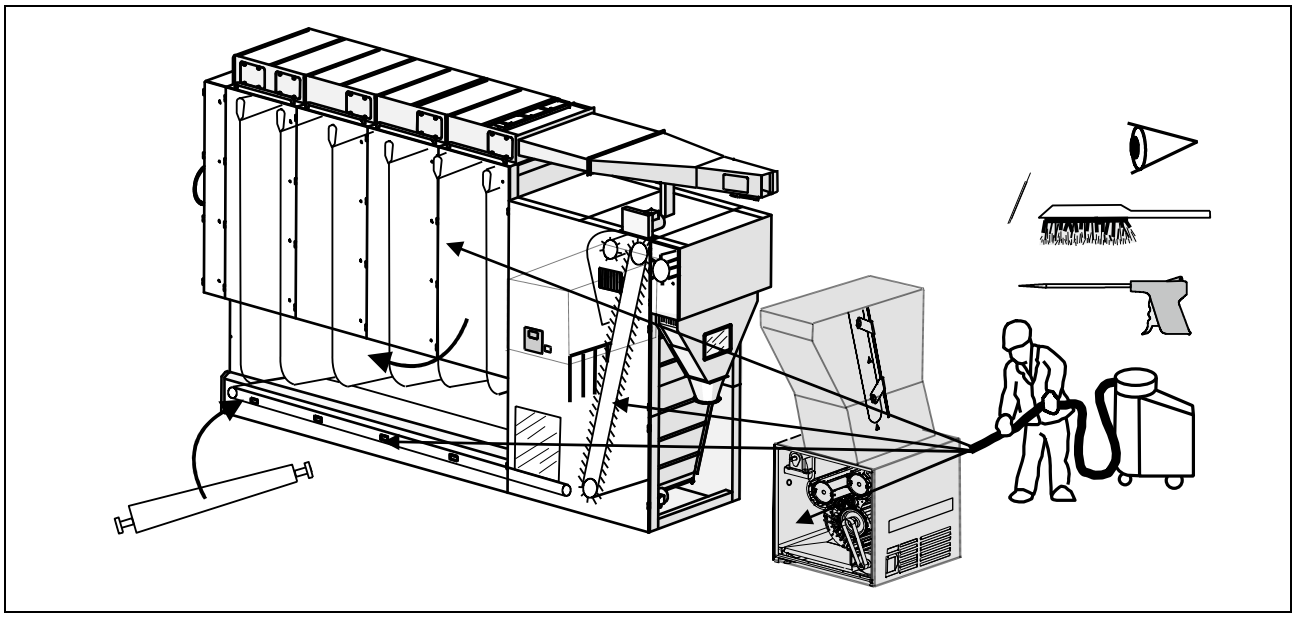


– Open the doors (1) on both sides.

– Blow out material from the collecting duct (2) using compressed air.

5.1.1.2 Inspect and clean storage area and rollers.

WARNING
Set the main switch to the “off” position and secure it with a lock.

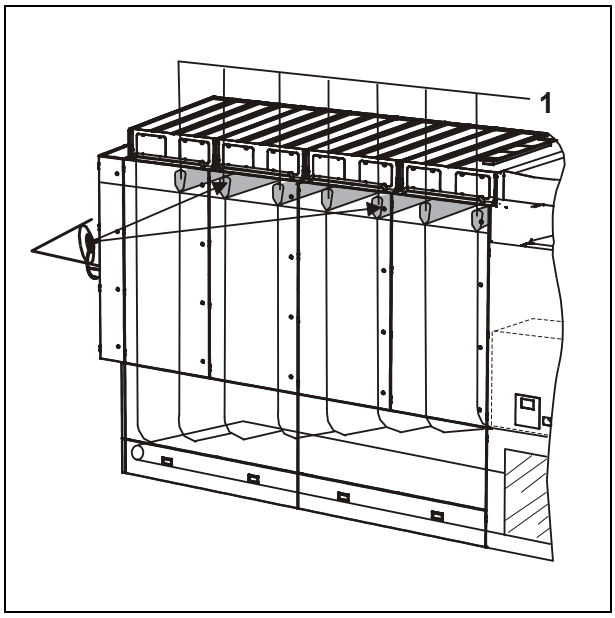


– Open all doors.
– Clean exhaust air chambers.
– Remove and clean the cleaning rod.
– Clean the inside of the conveyor belt
– Clean the inside of the spiked lattice.
– Clean the module, chain side and belt side.

5.1.2 Interval 2000 Operating hours (Cyclic, repeat regularly):

5.1.2.1 Clean the separating vanes

WARNING
Set the main switch to the “off” position and secure it with a lock.

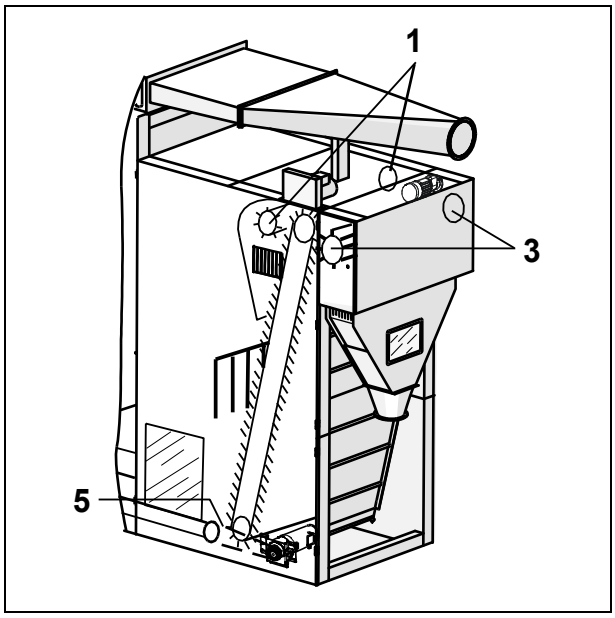


– Check the separating vanes for fiber accumulation (fiber tails) and clean, if required.

– Clean any fiber finish or honeydew residues with a wet cloth.

5.1.2.2 Lubricating bearings and chains

WARNING
Set the main switch to the “off” position and secure it with a lock.



WARNING
Set the main switch to the “off” position and secure it with a lock.

– Lubricate nipple (1).

Medium: EP 2

Quantity:	3 pump strokes
Location number:	1
Place:	Opening roller

☞ UNImix, Page 4/25

☞ Grease gun, Page 4/1

– Lubricate nipple (3).

Medium: EP 2

Quantity:	3 pump strokes
Location number:	3
Place:	Take-off roller

☞ UNImix, Page 4/25

☞ Grease gun, Page 4/1

– Lubricate chain (5).

Medium: CC320

Quantity:	Lightly coat
Location number:	5
Place:	Conveyor belt chain

☞ UNImix, Page 4/25

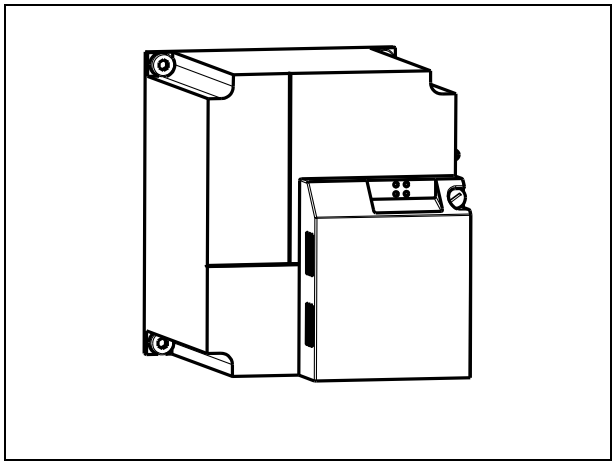
– Lubricate chain (5).

Medium: S 21

Quantity:	Lightly spray
Location number:	5
Place:	Conveyor belt chain

☞ UNImix, Page 4/25

5.1.2.3 Cleaning the housing of the frequency converter



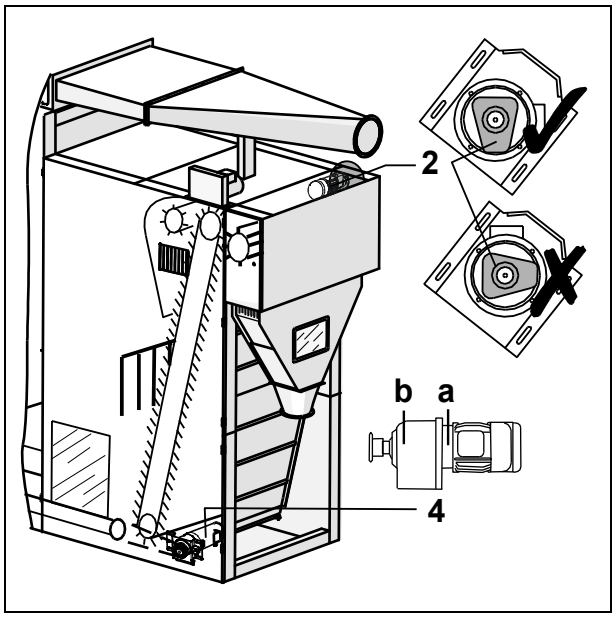
WARNING
When the main switch is set to the "on" position, elements downstream of the main switch are live.
Injury due to electric shock.
Prior to commencing electrical installation work, switch off the machine via the main switch and secure the switch with a padlock.

– Clean the entire surface of the housing with a vacuum cleaner.

5.1.3 Interval 32000 Operating hours (Cyclic, repeat regularly):

5.1.3.1 Changing lubricant for gear motors

WARNING
Set the main switch to the “off” position and secure it with a lock.



– Remove contaminated lubricant by flushing out the gearboxes of the motors

– **Prerequisite:** Do not mix different types of lubricant.
Spiked-lattice drive unit: Lubricate the gear motor (2).
Note: Ensure that gear motor is installed in the correct position!
Medium: CC220

Quantity:	180 cm³
Location number:	2
Place:	Gear motor for spiked lattice

☞ UNImix, Page 4/25

– Conveyor-belt drive unit: Fill the pre-stage gearbox (a) with lubricant.
Medium: S 26

Quantity:	175 g
Location number:	4
Place:	Gear motor for conveyor belt

☞ UNImix, Page 4/25

– Conveyor-belt drive unit: Lubricate the main gearbox (b).
Medium: S 26

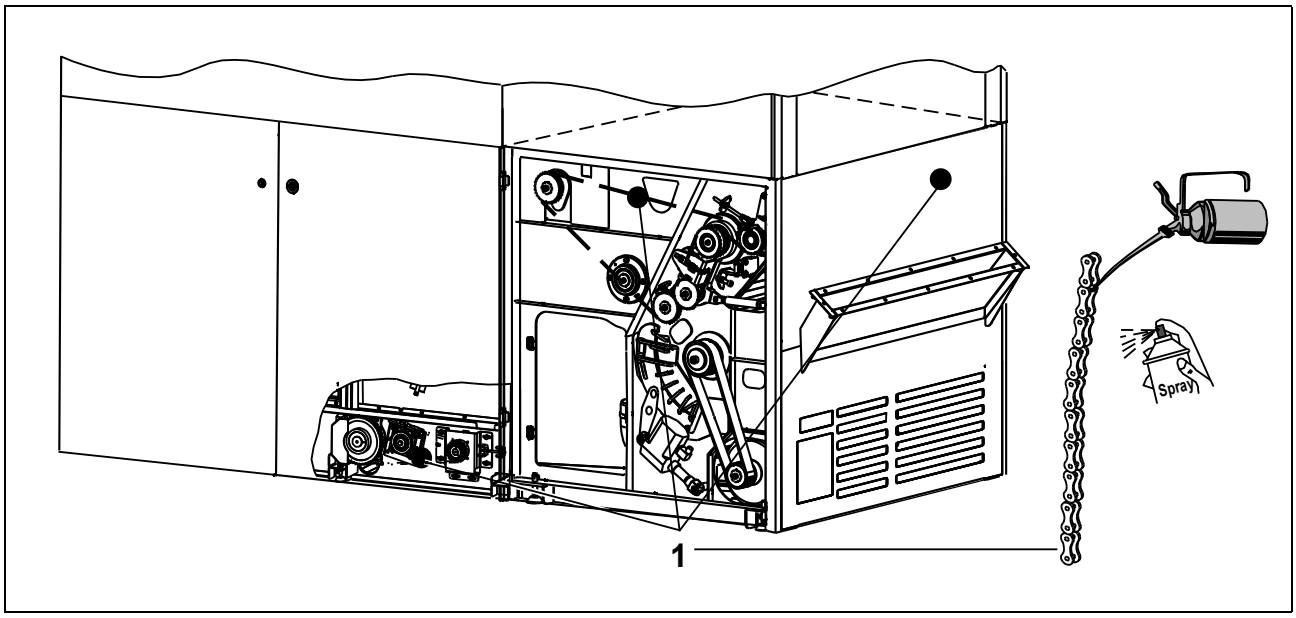
Quantity:	600 g
Location number:	4
Place:	Gear motor for conveyor belt

☞ UNImix, Page 4/25

5.2 R/S module

5.2.1 Interval 2000 Operating hours (Cyclic, repeat regularly):

5.2.1.1 Lubricating chains (R/S module)



– Lubricate the chains (1) with a chain spray.
Medium: S 21

Quantity:	Lightly spray
Location number:	1
Place:	Chains for drives

☞ R/S module, Page 4/26

– Oil the chains (1).
Medium: CC320

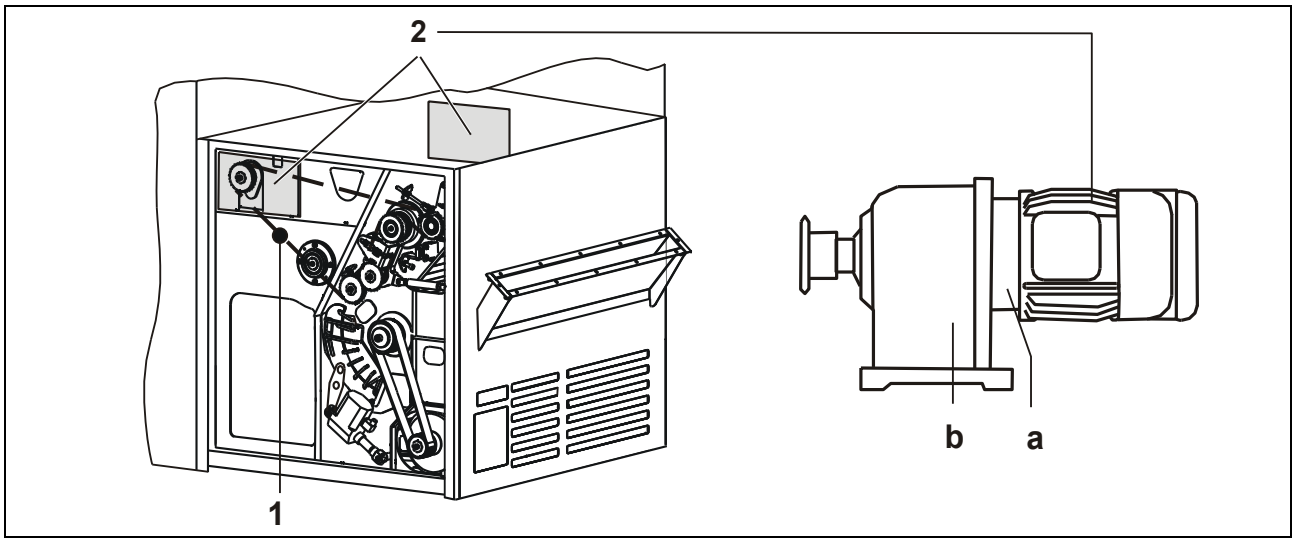
Quantity:	Lightly coat
Location number:	1
Place:	Chains for drives

☞ R/S module, Page 4/26

5.2.2 Interval 32000 Operating hours (Cyclic, repeat regularly):

5.2.2.1 Change of lubricant in gear motors (R/S module)

WARNING
Set the main switch to the “off” position and secure it with a lock.



– Rinse the soiled lubricant from the gearboxes of the motors (2).

– **Prerequisite:** Do not mix different types of lubricants.
Fill the pre-stage gearboxes (a) with lubricant.
Medium: S 26

Quantity:	0.175 l
Location number:	2
Place:	Pre-stage gearbox

☞ R/S module, Page 4/26

– Fill the main gearboxes (b) with lubricant
Medium: S 26

Quantity:	0.6 l
Location number:	2
Place:	Main gearbox

☞ R/S module, Page 4/26

6 Lubricant Manufacturer

Lubricant	Manufacturer	Name
EP 2	AGIP	GR MU EP 2
	AVIA	AVIALITH 2 EP
	BP	ENERGREASE LS EP-2
	CASTROL	SPHEEROL EPL 2
	ExxonMOBIL	MOBILUX EP2
	KLÜBER	MICROLUBE GBU-Y 131
	LAGERMEISTER	LAGERMEISTER TS
	OPTIMOL	LONGTIME PD2
	PETRO CANADA	PRECISION GENERAL PURPOSE EP 2
	SHELL	ALVANIA EP (LF) 2
	TEXACO	MULTIFAK EP2
	VALVOLINE	MULTIPLEX SG - 2
CC320	AGIP	BLASIA 320
	AVIA	AVIA GEAR RSX 320
	BP	ENERGOL GR.XP 320
	CASTROL	ALPHA SP 320
	ExxonMOBIL	MOBIGEAR 600 XP 320
	KLÜBER	KLÜBEROIL GEM 1 -320N
	OPTIMOL	OPTIGEAR BM 320
	PETRO CANADA	ENDURATEX EP 320
	SHELL	OMALA 320
	TEXACO	MEROPA 320
	VALVOLINE	EPG 320
S 21	CASTROL	VISCOGEN KL 23
	INTERFLON	FOOD LUBE G 150 SPRAY
	KLÜBER	HOTEMP 2000 SPRAY
	LUBCON	TURMOFLUID 450 TURMOLYB MDC SPRAY
	OPTIMOL	VISCOGEN KL 23
	PETRO CANADA	PURITY FG SPRAY
	VALVOLINE	WHITE SYNTHETIC CHAINLUBE
CC220	AGIP	BLASIA 220
	AVIA	AVIA GEAR RSX 220
	BP	ENERGOL GR-XP 220
	CASTROL	ALPHA SP 220
	ExxonMOBIL	MOBILGEAR 600 XP 220
	KLÜBER	KLÜBEROIL GEM 1 -220N
	OPTIMOL	OPTIGEAR BM 220
	PETRO CANADA	ENDURATEX EP 220
	SHELL	OMALA 220
	TEXACO	MEROPA 220
	VALVOLINE	EPG 220
S 26	AVIA	AVIALITH 00/000 EP

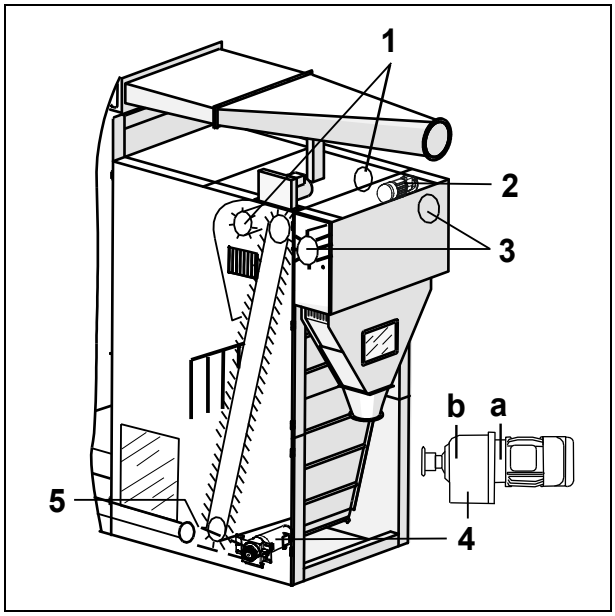
Lubricant	Manufacturer	Name
S 26	BP	ENERGREASE LS EP 00
	CASTROL	LONGTIME PD 00
	ExxonMOBIL	MOBILUX EP 004
	KLÜBER	MICROLUBE GB 00
	PETRO CANADA	PRECISION XL EP 00
	SHELL	ALVANIA GC 00
	TEXACO	TEXCLAD AI EP 00
	VALVOLINE	SEMI FLUID GREASE 00

7 Standard lubricant

Code	Designation	Viscosity	DIN	ISO	Description
EP 2	Grease	Viscosity of the base oil: 100-250 mm2/s	KP2G-20 (51825)		EP grease, lithium soap or equivalent thickener, penetration; viscosity: 260 -310 mm2/s, NLGI class 2. Lead-soap-based or phosphorus-sulphur-based high-pressure additives or equivalent EP additives. Ageing-protection and anti-rust additives. Not aggressive to bronze.
CC320	EP oil, heavy	Viscosity (in mm2/s) at 40°C according to ISO 320	CLP 320 (51517/3)	CC320	Paraffin-based oil, VI ³ 90. No or insignificant swelling of the o-rings and other synthetic rubber seals. Not aggressive to bronze. Good load-resistance capacity: FZG test load level 12, phosphorus-sulphur-based high-pressure additives or equivalent EP additives.
S 21	Chain spray				Synthetic lubricants specifically used for chain lubrication. Extremely pressure-absorbent substances, that are free of solid matter and silicone, form a highly-adhesive lubrication film.
CC220	EP oil	Viscosity (in mm2/s) at 40°C according to ISO 220	CLP220 (51517/3)	CC220	Paraffin-based oil, VI greater than 90. No or insignificant swelling of the o-rings and other synthetic rubber seals. Not aggressive to bronze. Good load-resistance capacity: FZG test load level 12, phosphorus-sulphur-based high-pressure additives or equivalent EP additives.
S 26	Low-viscosity gearing grease	Penetration class 00			Low-viscosity grease with high-pressure additives

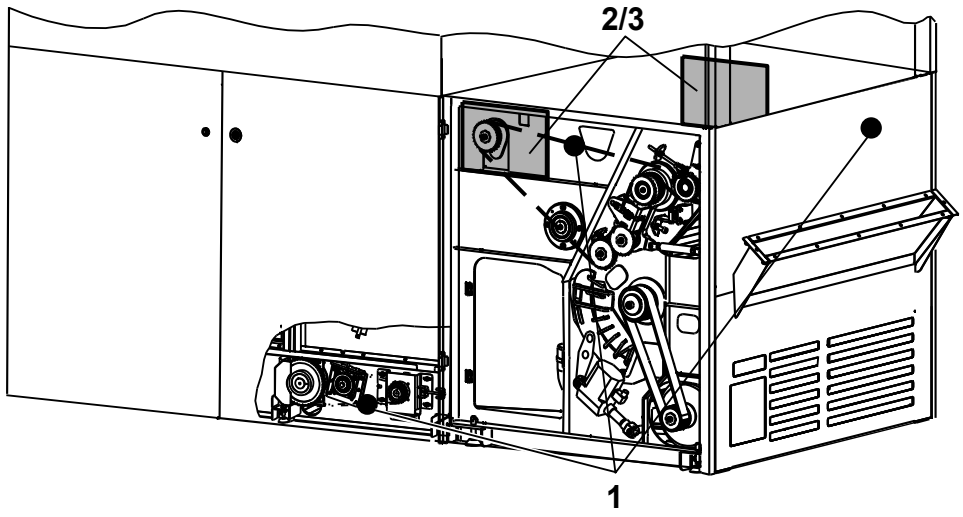
8 Lubrication points

UNImix



Location number	Place	Number	Medium	Quantity	Special tools
1	Opening roller	2	EP 2	3 pump strokes	
2	Gear motor for spiked lattice	1	CC220	180 cm³	
3	Take-off roller	2	EP 2	3 pump strokes	
4	Gear motor for conveyor belt	Prestage gearbox, “a”	S 26	175 g	
4	Gear motor for conveyor belt	Main gearbox, “b”	S 26	600 g	
5	Conveyor belt chain	1	CC320	Lightly coat	
5	Conveyor belt chain	1	S 21	Lightly spray	

R/S module



Location number	Place	Number	Medium	Quantity	Special tools
1	Chains for drives	.	CC320	Lightly coat	
1	Chains for drives	.	S 21	Lightly spray	
2	Pre-stage gearbox	a	S 26	0.175 l	
2	Main gearbox	b	S 26	0.6 l	

Part 5

Troubleshooting

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1 Explanation on this section of the operating instructions

What is Part 5 for ?
Part 5 helps in discovering the cause of a fault and remedying it.

What information is contained in Part 5 ?
Part 5 lists the causes of faults and gives information about remedying them.

When does Part 5 need to be consulted?
When a fault is displayed on the machine with an error code or in the case of faults which cannot be recognised by the machine.

2 Operator interface panel

2.1 Malfunction

Code	Designation Reaction/consequences	Cause	Remedy
201	SW fault	Internal monitoring of software has been triggered.	Contact Rieter Reveal the display text of Code 201 in data screen 31.4
202	SW timeout	Internal time-monitoring of software has been triggered.	Contact Rieter Reveal the display text of Code 202 in data screen 31.4
203	Data initialized	Triggers a cold start procedure when started	Enter values into data screens during cold start
210	Emergency stop, control panel S10	No response from EMERGENCY STOP button	Disengage the EMERGENCY STOP button Check EMERGENCY STOP button and wiring
211	Doors open	Doors open	Doors close
		No signal from limit switch	Check the functioning and connection of the limit switch; replace, if necessary. ☞ 81.1, Page 2/71
212	Safety circ. relay triggered ON K11	Fault	Switch the main switch off and then on again
		EMERGENCY STOP button	Check the functioning and connection of the Emergency STOP button; replace, if necessary.
		Attach the relay contacts using adhesive	Check functioning and setting
		Safety switch	Check the functioning and connection of the safety switch; replace, if necessary. ☞ 30.4, Page 2/63
213	Safety circ. relay trigger OFF K11	Fault	Switch the main switch off and then on again
		EMERGENCY STOP button	Check the functioning and connection of the Emergency STOP button; replace, if necessary.
		Safety switch	Check the functioning and connection of the safety switch; replace, if necessary. ☞ 30.4, Page 2/63
214	Hardware fault A11	Fault	Switch the main switch off and then on again
		CAN bus, no communication	Check CAN bus wiring.
		Faulty hardware	Check connections Replace A11 module (electric circuit diagram)

Code	Designation Reaction/consequences	Cause	Remedy
215	Hardware fault CAN-module A20	Fault	Switch the main switch off and then on again
		DIP switches of CAN bus are incorrectly set	Set SW0 and SW1 DIP switches according to the electric circuit diagram
		CAN bus, no communication	Check CAN bus wiring.
		24 V supply voltage unit is faulty	Check wiring
		A 20 module is defective	Replace A 20 module
216	Monitoring delivery suction B1	No vacuum	Check fan
		Pressure switch	Correctly set the pressure switch Check plastic pipe to pressure switch
		Delivery section is blocked	Clear out material Correctly set the air volume rate Check transport fan Check motor and drives
217	Power supply F2	Automatic circuit breaker for the R/S module feed has been triggered	Check the setting for the automatic circuit breaker
220	Initialization, converter U21	Fault	Switch the main switch off and then on again
		DIP switches for frequency converter are incorrectly set	Set SW1, SW2 and SW3 DIP switches according to the electrical circuit diagram
		CAN bus, no communication	Check CAN bus wiring.
		Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
221	Converter - type U21	Fault	Switch the main switch off and then on again
		Incorrect type of frequency converter	Use a Rieter frequency converter.
222	Initialization, converter U22	Fault	Switch the main switch off and then on again
		DIP switches for frequency converter are incorrectly set	Set SW1, SW2 and SW3 DIP switches according to the electrical circuit diagram
		CAN bus, no communication	Check CAN bus wiring.
		Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
223	Converter - type U22	Fault	Switch the main switch off and then on again

Code	Designation Reaction/consequences	Cause	Remedy
223	Converter - type U22	Incorrect type of frequency converter	Use a Rieter frequency converter.
224	Initialization, converter U23	Fault	Switch the main switch off and then on again
		DIP switches for frequency converter are incorrectly set	Set SW1, SW2 and SW3 DIP switches according to the electrical circuit diagram
		CAN bus, no communication	Check CAN bus wiring.
		Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
225	Converter - type U23	Fault	Switch the main switch off and then on again
		Incorrect type of frequency converter	Use a Rieter frequency converter.
230	cable rupture pressure sensor B2	Pressure sensor has no valid signal values	Defective signal cable Defective pressure sensor Check wiring
231	excess pressure storage	Pressure sensor signal value is too high	Defective signal cable Defective pressure sensor Check pressure sensor wiring
232	Malfunction Feed fan	Fan input is on	Attach K1 relay contacts with adhesive Broken wire, wiring fault Check the wiring.
240	Overload conveyor belt Q21	Motor protection switches	Switch on motor protection switch
		Motor protection switches	Set the rated current correctly (electric circuit diagram)
		No signal	Check wiring and connections from motor protection switch, frequency converter and motor
		Supply voltage incorrect	Check supply voltage
		Current consumption	Check current
		Motor protection switches	Check motor protection switch Replace motor protection switch
		Mechanical problems	Check the rotating parts for ease of motion
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
241	Overtemperature conveyor belt M21	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
		Mechanical problems	Check the rotating parts for ease of motion

Code	Designation Reaction/consequences	Cause	Remedy
241	Overtemperature conveyor belt M21	No signal	Check wiring and connections from motor protection switch, frequency converter and motor
		Supply voltage incorrect	Check supply voltage
242	Overtemperature, converter U21	Frequency converter	Check installation of heat sink; also check it for dirt accumulation Check functioning of cooling fan for frequency converter
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
		Temperature of the electrical control cabinet is too high	Lower ambient temperature.
243	Overvoltage, converter U21	Supply voltage incorrect	Check supply voltage
		Frequency converter is defective	Replace frequency converter
244	Undervoltage, converter U21	Supply voltage incorrect	Check supply voltage
		Frequency converter is defective	Replace frequency converter
245	Overcurrent, converter U21	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
246	Overload, converter U21	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
247	Communication, converter U21	Fault	Switch the main switch off and then on again
		DIP switches for frequency converter are incorrectly set	Set SW1, SW2 and SW3 DIP switches according to the electrical circuit diagram
		Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
248	Malfunction, converter U21	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
249	Fault, converter U21	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
250	Fault, converter U21	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
260	Overload spiked feed lattice Q22	Motor protection switches	Switch on motor protection switch
		Motor protection switches	Set the rated current correctly (electric circuit diagram)

Code	Designation Reaction/consequences	Cause	Remedy
260	Overload spiked feed lattice Q22	No signal	Check wiring and connections from motor protection switch, frequency converter and motor
		Supply voltage incorrect	Check supply voltage
		Current consumption	Check current
		Motor protection switches	Check motor protection switch Replace motor protection switch
		Mechanical problems	Check the rotating parts for ease of motion
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
261	Overtemp. spiked feed lattice M22	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
		Mechanical problems	Check the rotating parts for ease of motion
		No signal	Check wiring and connections from motor protection switch, frequency converter and motor
		Supply voltage incorrect	Check supply voltage
262	Overtemperature, converter U22	Frequency converter	Check installation of heat sink; also check it for dirt accumulation Check functioning of cooling fan for frequency converter
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
		Temperature of the electrical control cabinet is too high	Lower ambient temperature.
263	Overvoltage, converter U22	Supply voltage incorrect	Check supply voltage
		Frequency converter is defective	Replace frequency converter
264	Undervoltage, converter U22	Supply voltage incorrect	Check supply voltage
		Frequency converter is defective	Replace frequency converter
265	Overcurrent, converter U22	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
266	Overload, converter U22	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
267	Communication, converter U22	Fault	Switch the main switch off and then on again

Code	Designation Reaction/consequences	Cause	Remedy
267	Communication, converter U22	DIP switches for frequency converter are incorrectly set	Set SW1, SW2 and SW3 DIP switches according to the electrical circuit diagram
		Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
268	Malfunction, converter U22	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
269	Fault, converter U22	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
270	Fault, converter U22	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
271	automatic dechoking failed	Machine still “overburdened” after 2 rectification attempts	Blockage due to material Check motor and drives
280	Overload opening roller Q23	Motor protection switches	Switch on motor protection switch
		Motor protection switches	Set the rated current correctly (electric circuit diagram)
		No signal	Check wiring and connections from motor protection switch, frequency converter and motor
		Supply voltage incorrect	Check supply voltage
		Current consumption	Check current
		Motor protection switches	Check motor protection switch Replace motor protection switch
		Mechanical problems	Check the rotating parts for ease of motion
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
281	Overtemperature, opening roller M23	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
		Mechanical problems	Check the rotating parts for ease of motion
		No signal	Check wiring and connections from motor protection switch, frequency converter and motor
		Supply voltage incorrect	Check supply voltage
282	Overtemperature, converter U23	Frequency converter	Check installation of heat sink; also check it for dirt accumulation Check functioning of cooling fan for frequency converter

Code	Designation Reaction/consequences	Cause	Remedy
282	Overtemperature, converter U23	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
		Temperature of the electrical control cabinet is too high	Lower ambient temperature.
283	Overvoltage, converter U23	Supply voltage incorrect	Check supply voltage
		Frequency converter is defective	Replace frequency converter
284	Undervoltage, converter U23	Supply voltage incorrect	Check supply voltage
		Frequency converter is defective	Replace frequency converter
285	Overcurrent, converter U23	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
286	Overload, converter U23	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
287	Communication, converter U23	Fault	Switch the main switch off and then on again
		DIP switches for frequency converter are incorrectly set	Set SW1, SW2 and SW3 DIP switches according to the electrical circuit diagram
		Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
288	Malfunction, converter U23	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
289	Fault, converter U23	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
290	Fault, converter U23	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
291	Overload take-off roller Q24	Motor protection switches	Switch on motor protection switch
		Motor protection switches	Set the rated current correctly (electric circuit diagram)
		No signal	Check wiring and connections from motor protection switch, frequency converter and motor
		Supply voltage incorrect	Check supply voltage
		Current consumption	Check current
		Motor protection switches	Check motor protection switch Replace motor protection switch

Code	Designation Reaction/consequences	Cause	Remedy
291	Overload take-off roller Q24	Mechanical problems	Check the rotating parts for ease of motion
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
300	Hardware fault CAN-module A30	Fault	Switch the main switch off and then on again
		DIP switches of CAN bus are incorrectly set	Set SW0 and SW1 DIP switches according to the electric circuit diagram
		CAN bus, no communication	Check CAN bus wiring.
		24 V supply voltage unit is faulty	Check wiring
		A 30 module is defective	Replace A 30 module
301	Initialization, converter U31	Fault	Switch the main switch off and then on again
		DIP switches for frequency converter are incorrectly set	Set SW1, SW2 and SW3 DIP switches according to the electrical circuit diagram
		CAN bus, no communication	Check CAN bus wiring.
		Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
302	Converter - type U31	Fault	Switch the main switch off and then on again
		Incorrect type of frequency converter	Use a Rieter frequency converter.
303	Initialization, converter U32	Fault	Switch the main switch off and then on again
		DIP switches for frequency converter are incorrectly set	Set SW1, SW2 and SW3 DIP switches according to the electrical circuit diagram
		CAN bus, no communication	Check CAN bus wiring.
		Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
304	Converter - type U32	Fault	Switch the main switch off and then on again
		Incorrect type of frequency converter	Use a Rieter frequency converter.
305	Initialization, converter U37	Fault	Switch the main switch off and then on again
		DIP switches for frequency converter are incorrectly set	Set SW1, SW2 and SW3 DIP switches according to the electrical circuit diagram

Code	Designation Reaction/consequences	Cause	Remedy
305	Initialization, converter U37	CAN bus, no communication	Check CAN bus wiring.
		Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
306	Converter - type U37	Fault	Switch the main switch off and then on again
		Incorrect type of frequency converter	Use a Rieter frequency converter.
310	Fill level too low B35	Material supply is too low	Adjust material supply (preceding machine)
		Production is too high	Reduce machine or line production
		Light barrier is defective	Check the functioning of the light barrier and replace, if necessary.
311	Filling B34/B35	The top light barrier is permanently covered, the bottom light barrier is not covered	Clean the light barrier Remove fibre accumulations from the light barrier.
		Light barrier is defective	Check the functioning of the light barrier and replace, if necessary.
312	Waste disposal B33	Interval for waste suction is too long	Check waste transport
313	flap position B37/B38	Bypass flap is not in the correct position	Check flap position Check limit switches. Check limit switches and their wiring.
320	Overload, feed rollers Q31	Motor protection switches	Switch on motor protection switch
		Motor protection switches	Set the rated current correctly (electric circuit diagram)
		No signal	Check wiring and connections from motor protection switch, frequency converter and motor
		Supply voltage incorrect	Check supply voltage
		Current consumption	Check current
		Motor protection switches	Check motor protection switch Replace motor protection switch
		Mechanical problems	Check the rotating parts for ease of motion
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
321	Overtemperature, feed rollers M31	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
		Mechanical problems	Check the rotating parts for ease of motion

Code	Designation Reaction/consequences	Cause	Remedy
321	Overtemperature, feed rollers M31	No signal	Check wiring and connections from motor protection switch, frequency converter and motor
		Supply voltage incorrect	Check supply voltage
322	Overtemperature, converter U31	Frequency converter	Check installation of heat sink; also check it for dirt accumulation Check functioning of cooling fan for frequency converter
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
		Temperature of the electrical control cabinet is too high	Lower ambient temperature.
323	Overvoltage, converter U31	Supply voltage incorrect	Check supply voltage
		Frequency converter is defective	Replace frequency converter
324	Undervoltage, converter U31	Supply voltage incorrect	Check supply voltage
		Frequency converter is defective	Replace frequency converter
325	Overcurrent, converter U31	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
326	Overload, converter U31	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
327	Communication, converter U31	Fault	Switch the main switch off and then on again
		DIP switches for frequency converter are incorrectly set	Set SW1, SW2 and SW3 DIP switches according to the electrical circuit diagram
		Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
328	Malfunction, converter U31	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
329	Fault, converter U31	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
330	Fault, converter U31	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
331	Speed feed rollers too low	Material wound around roller	Remove wound material from roller and clean the intermediate spaces

Code	Designation Reaction/consequences	Cause	Remedy
331	Speed feed rollers too low	Mechanical problems	Check the rotating parts for ease of motion
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
340	Overload, opening roller Q32	Motor protection switches	Switch on motor protection switch
		Motor protection switches	Set the rated current correctly (electric circuit diagram)
		No signal	Check wiring and connections from motor protection switch, frequency converter and motor
		Supply voltage incorrect	Check supply voltage
		Current consumption	Check current
		Motor protection switches	Check motor protection switch Replace motor protection switch
		Mechanical problems	Check the rotating parts for ease of motion
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
341	Overtemperature, opening roller M32	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
		Mechanical problems	Check the rotating parts for ease of motion
		No signal	Check wiring and connections from motor protection switch, frequency converter and motor
		Supply voltage incorrect	Check supply voltage
342	Overtemperature, converter U32	Frequency converter	Check installation of heat sink; also check it for dirt accumulation Check functioning of cooling fan for frequency converter
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
		Temperature of the electrical control cabinet is too high	Lower ambient temperature.
343	Overvoltage, converter U32	Supply voltage incorrect	Check supply voltage
		Frequency converter is defective	Replace frequency converter
344	Undervoltage, converter U32	Supply voltage incorrect	Check supply voltage
		Frequency converter is defective	Replace frequency converter

Code	Designation Reaction/consequences	Cause	Remedy
345	Overcurrent, converter U32	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
346	Overload, converter U32	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
347	Communication, converter U32	Fault	Switch the main switch off and then on again
		DIP switches for frequency converter are incorrectly set	Set SW1, SW2 and SW3 DIP switches according to the electrical circuit diagram
		Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
348	Malfunction, converter U32	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
349	Fault, converter U32	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
350	Fault, converter U32	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
351	Speed opening roller too low	Delivery section is blocked	Clear out material Correctly set the air volume rate Check transport fan Check motor and drives
		Material wound around roller	Remove wound material from roller and clean the intermediate spaces
		Mechanical problems	Check the rotating parts for ease of motion
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
352	Speed monitor B32	Proximity switch is not functioning correctly.	Check setting and functioning of the proximity switch. Check wiring. Replace proximity switch
360	Overload, compression rollers Q37	Motor protection switches	Switch on motor protection switch
		Motor protection switches	Set the rated current correctly (electric circuit diagram)
		No signal	Check wiring and connections from motor protection switch, frequency converter and motor
		Supply voltage incorrect	Check supply voltage
		Current consumption	Check current

Code	Designation Reaction/consequences	Cause	Remedy
360	Overload, compression rollers Q37	Motor protection switches	Check motor protection switch Replace motor protection switch
		Mechanical problems	Check the rotating parts for ease of motion
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
361	Overtemperature comp. rollers M37	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
		Mechanical problems	Check the rotating parts for ease of motion
		No signal	Check wiring and connections from motor protection switch, frequency converter and motor
		Supply voltage incorrect	Check supply voltage
362	Overtemperature, converter U37	Frequency converter	Check installation of heat sink; also check it for dirt accumulation Check functioning of cooling fan for frequency converter
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
		Temperature of the electrical control cabinet is too high	Lower ambient temperature.
363	Overvoltage, converter U37	Supply voltage incorrect	Check supply voltage
		Frequency converter is defective	Replace frequency converter
364	Undervoltage, converter U37	Supply voltage incorrect	Check supply voltage
		Frequency converter is defective	Replace frequency converter
365	Overcurrent, converter U37	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
366	Overload, converter U37	Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
367	Communication, converter U37	Fault	Switch the main switch off and then on again
		DIP switches for frequency converter are incorrectly set	Set SW1, SW2 and SW3 DIP switches according to the electrical circuit diagram
		Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter

Code	Designation Reaction/consequences	Cause	Remedy
368	Malfunction, converter U37	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
369	Fault, converter U37	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
370	Fault, converter U37	Frequency converter fault has been detected	Check connections for frequency converter Replace frequency converter
371	Speed compression rollers too low	Material wound around roller	Remove wound material from roller and clean the intermediate spaces
		Mechanical problems	Check the rotating parts for ease of motion
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
380	Malfunction Foreign matter module	Foreign-matter module fault	See operating manual for foreign-matter module
381	Signalfault Foreign matter module	No signal	Check wiring and connections
		Foreign-matter module fault	See operating manual for foreign-matter module
382	Overload Q2	No signal	Check wiring and connections
		Motor protection switches	Switch on motor protection switch
		Motor protection switches	Check motor protection switch Replace motor protection switch
		Motor protection switches	Set the rated current correctly (electric circuit diagram)
		Supply voltage incorrect	Check supply voltage
		Current consumption	Check current

2.2 Warning

Code	Designation Reaction/consequences	Cause	Remedy
550	opening roller position not reached	The electric cylinder has not reached the target position within the prescribed time.	Check wiring for electric cylinder. Check the mechanics for the grating setting
552	Filling minimum	Material supply is too low	Adjust material supply (preceding machine)
		Production is too high	Reduce machine or line production
		Light barrier is defective	Check the functioning of the light barrier and replace, if necessary.
553	Monitoring delivery suction	No vacuum	Check fan
		Pressure switch	Correctly set the pressure switch Check plastic pipe to pressure switch
		Delivery section is blocked	Clear out material Correctly set the air volume rate Check transport fan Check motor and drives
560	Minimal filling, R/S module	Material supply is too low	Adjust material supply (preceding machine)
		Production is too high	Reduce machine or line production
		Light barrier is defective	Check the functioning of the light barrier and replace, if necessary.
562	Speed monitor opening roller	Delivery section is blocked	Clear out material Correctly set the air volume rate Check transport fan Check motor and drives
		Material wound around roller	Remove wound material from roller and clean the intermediate spaces
		Mechanical problems	Check the rotating parts for ease of motion
		Motor problems	Clean motor Check motor. (Bearing, coil, shaft.) Check current consumption
564	M33 Grid position not reached	The electric cylinder has not reached the target position within the prescribed time.	Check wiring for electric cylinder. Check the mechanics for the grating setting
565	M34 Grid position not reached	The electric cylinder has not reached the target position within the prescribed time.	Check wiring for electric cylinder. Check the mechanics for the grating setting
566	Waste disposal	Interval for waste suction is too long	Check waste transport
570	Foreign matter module warning	Warning display from foreign-matter module	Display with signal lamp See operating manual for foreign-matter module

Code	Designation Reaction/consequences	Cause	Remedy
571	Foreign matter module swiched off	No “Power on” signal from foreign-matter module.	Switch on foreign-matter module

2.3 Maintenance warning

Code	Designation Reaction/consequences	Cause	Remedy
600	Data system, no ethernet module A18	A18 Ethernet module is defective	Replace A18 Ethernet module
		A18 Ethernet module is missing	Install A18 Ethernet module
649	Replace battery	Battery test mechanism has responded. Energy of battery is too low or battery is missing.	Replace battery

3 Error not displayed

3.1 CAN IO module CX408

3.1.1 LED "status" on module CX408 does not light up green

Cause	Remedy
CAN I/O module may be faulty	Check module and possibly replace. ☞ Checking CAN I/O module CX408, Page 6/95

Part 6

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1 Explanation on this section of the operating instructions

What is Section 6 for?

Section 6 contains the detailed function and task descriptions, such as “Description of components”, “Dismantling”, “Installation”, “Setting”, etc.

Reference is made in other sections of the operating instructions to these detailed descriptions.

What information is contained in Section 6?

For a specific subassembly, the necessary descriptions are given in the following order: Function description, dismantling, installation, checking, setting.

The special tools required are listed at the start.

The information regarding threaded connections is listed at the end.

When does Section 6 need to be consulted?

Sections 2-5 can be consulted according to the situation. Within these sections, reference is made to the detailed function and task descriptions of Section 6.

2 Safety precautions

2.1 Safety precautions during dismantling

When tackling dismantling jobs it is necessary to take suitable safety precautions.

Switch off main switch Q10 and secure with padlock.
All jobs requiring these security measures are indicated by an appropriate symbol on the particular page.

2.2 Safety precautions during installation

Switch off main switch Q10 and secure with padlock.
All jobs requiring these security measures are indicated by an appropriate symbol on the particular page.

2.3 Safety precautions during adjusting jobs

When tackling adjusting jobs it is necessary to take suitable safety precautions.

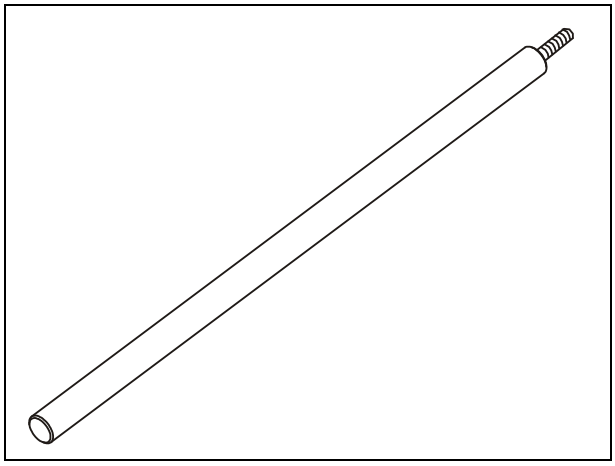
2.4 Work safety for checking tasks

When tackling checking jobs it is necessary to take suitable safety precautions.

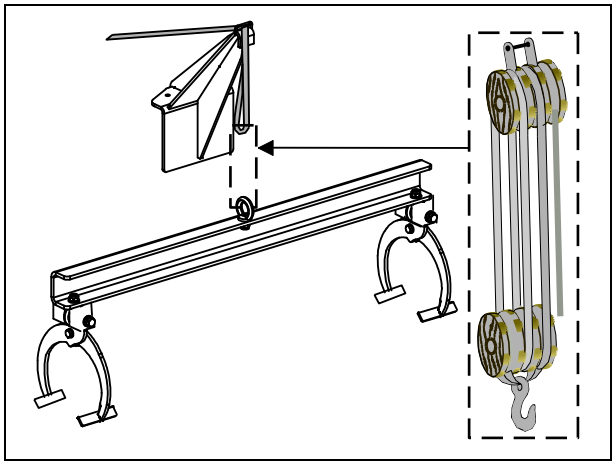
2.5 Safety precautions during measuring jobs

When tackling measuring jobs it is necessary to take suitable safety precautions.

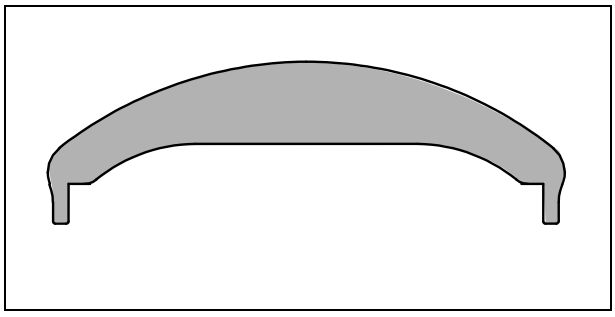
3 Overview of special tools



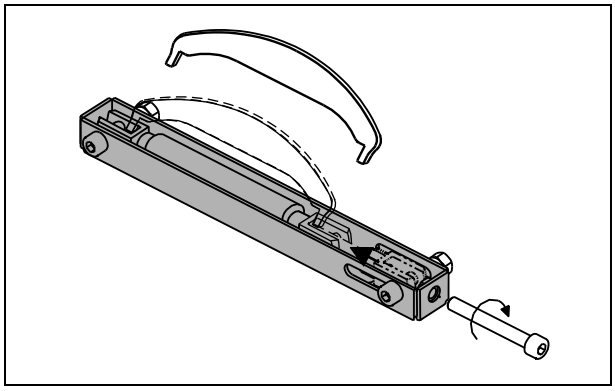
Extension
Used for removing the conveyor belt rollers.



Suspension device for the B 76
Removal of spiked lattice for the B 76

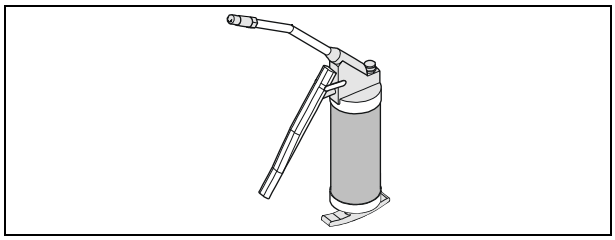


Assembly tool for gas pressure spring
Used to install and remove gas pressure springs of the feed rollers.



Preparing the gas pressure spring prior to application of assembly tool

Compress the gas pressure spring prior to fitting the tool



Grease gun

Lubrication of lubricating nipple

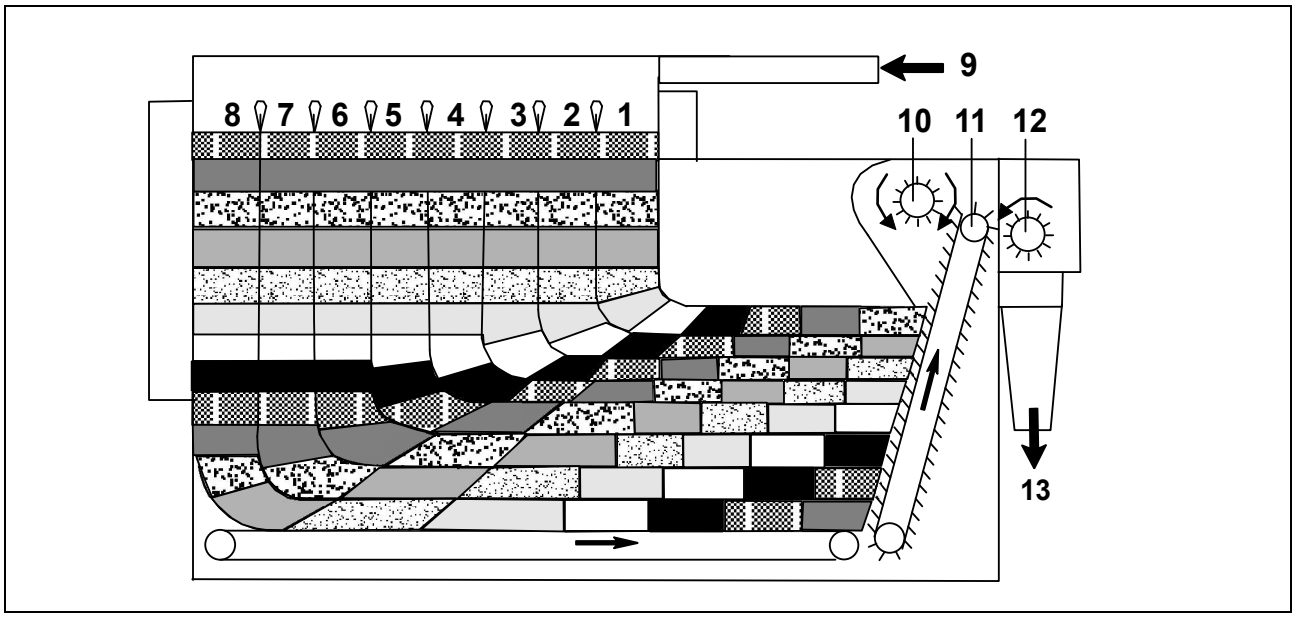
Capacity per pump stroke	0.333 cm³

Note: The capacity without counter-pressure is 0.5 cm³

4 UNImix

4.1 Description

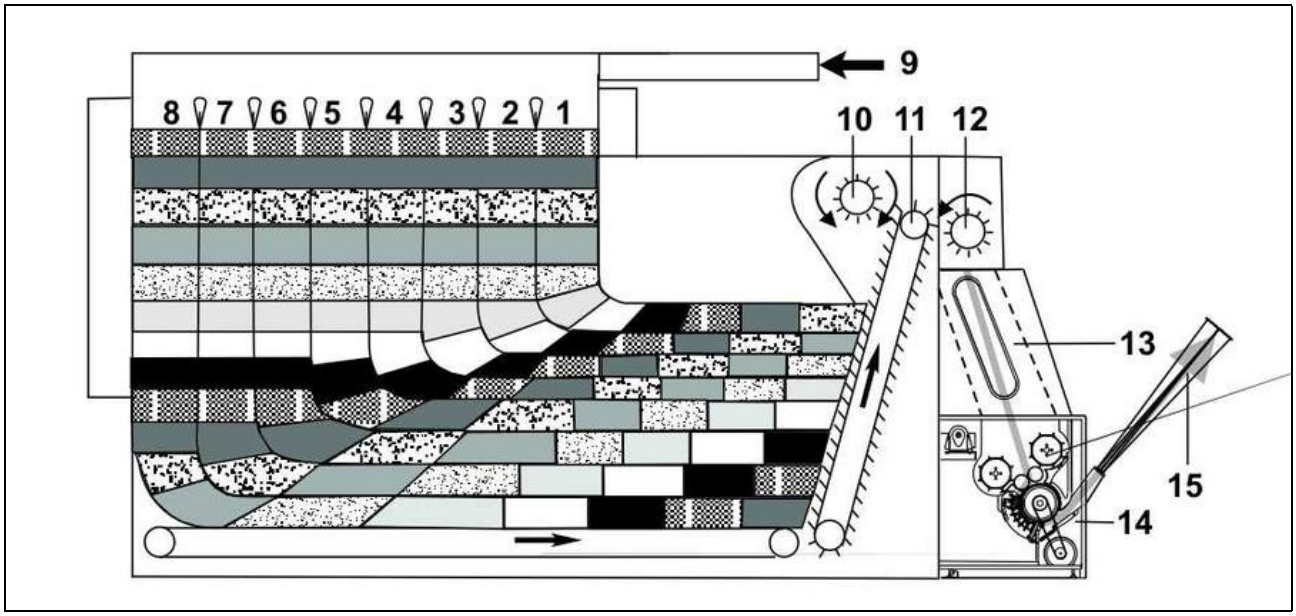
Purpose: UNImix B 76: Mixing and opening of material



Method of operation

- The partition walls divide the fed material into layers.
- The blend is produced by shifting the layers (1....8) between the material inlet (9) and the material outlet.
- The upright lattice (11) removes material simultaneously from all eight layers, so that a homogeneous blend is produced.
- The material is again thoroughly blended in the area of opening roll (10).
- The distance between the opening roller (10) and the spiked lattice (11) affects the production and the degree of opening.
- The take-off roller (12) removes the material from the spiked lattice (11).
- The tufts are collected in the suction duct (13) from where they are then extracted by the next machine downstream.

Purpose: UNImix B 76 R/S: Blending and cleaning of material using a grating for cotton or an opening mechanism for synthetic fibres.



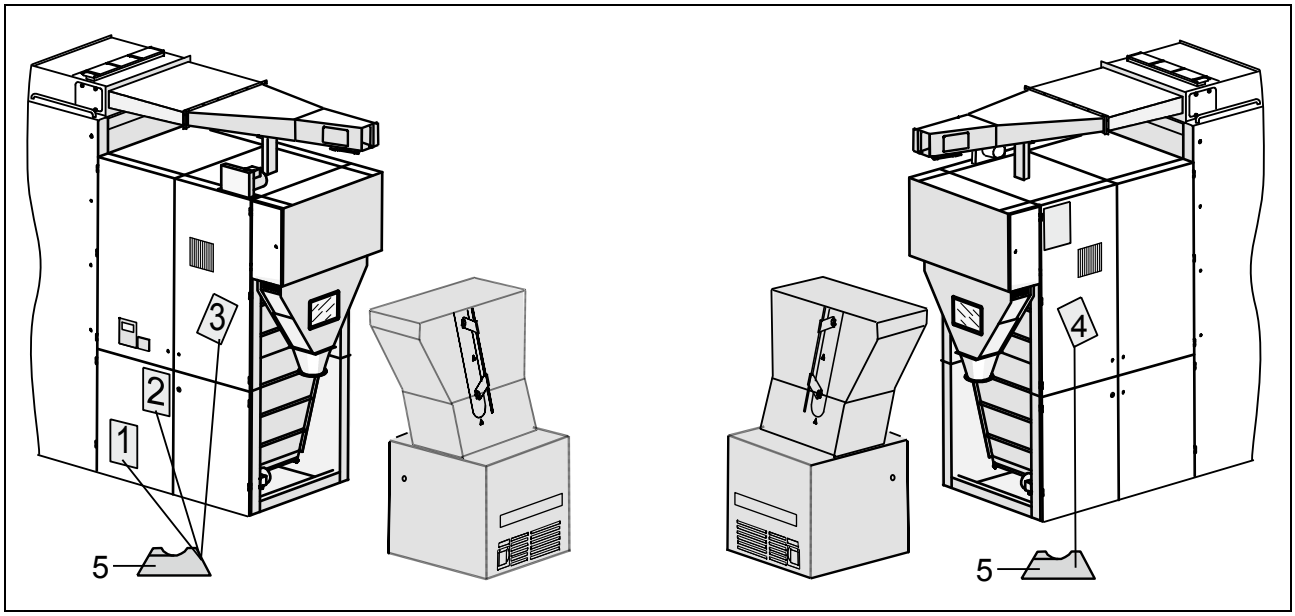
Method of operation

- The partition walls divide the fed material into layers.
- The blend is produced by shifting the layers (1....8) between the material inlet (9) and the material outlet.
- The upright lattice (11) removes material simultaneously from all eight layers, so that a homogeneous blend is produced.
- The material is again thoroughly blended in the area of opening roll (10).
- The distance between the opening roller (10) and the spiked lattice (11) affects the production and the degree of opening.
- The take-off roller (12) removes the material from the spiked lattice (11).
- The tufts are collected in the feed chute of the module (13).
- The material is cleaned and opened in the cleaning section (14) and then fed to the next machine downstream.
- The tufts are collected in the suction duct (15) from where they are then extracted by the next machine downstream.

4.2 Removing the windows

WARNING
Set the main switch to the “off” position and secure it with a lock.

Sequence of steps



– In an emergency, the safety screws (5) for the windows (1....4) can be loosened using a chisel.
  ⟹ Once loosened, the safety screws are no longer usable.

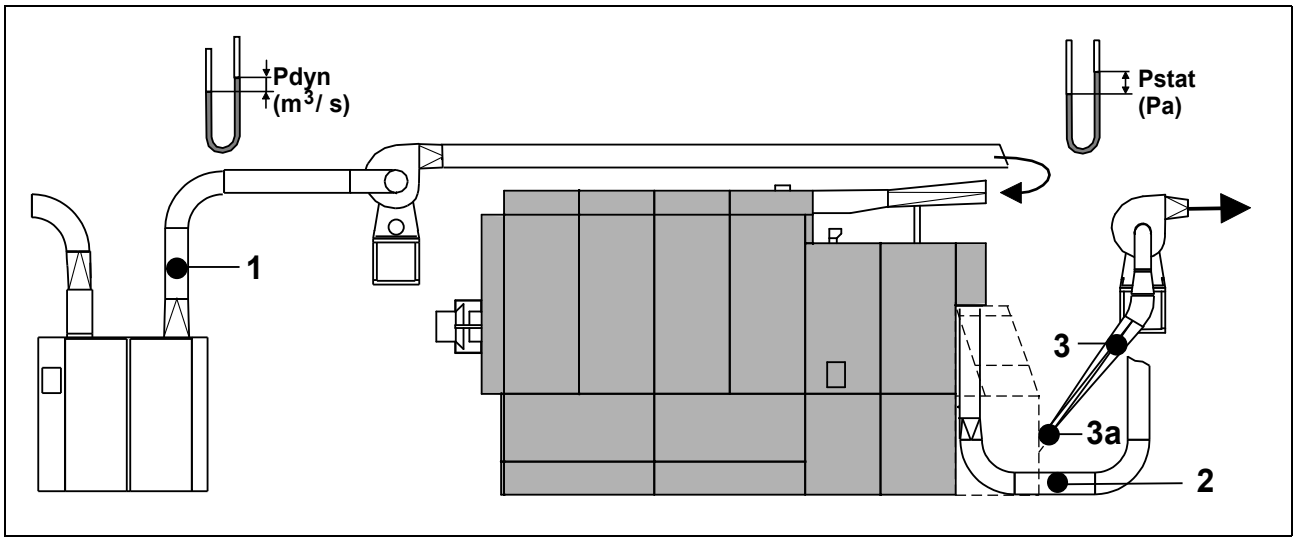
– Replace damaged safety screws with screws of the same type.
  Note: Do not use any other types of screw. Otherwise, the required level of safety is no longer guaranteed.

4.3 Setting suction values

Settings, Page 3/3

WARNING
Set the main switch to the “off” position and secure it with a lock.

Sequence of steps



– Measure the air flow rate at a straight pipe section.

  Note: Ideally, each measuring point should be at a distance of 10 times the pipe diameter ahead of or beyond a bend, funnel, transition section, etc. If this is not possible, select measuring points as indicated in the diagram.

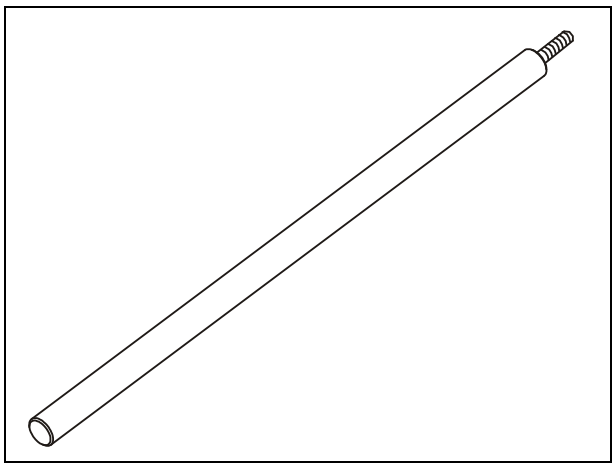
Air ratio

Extraction point for upstream machine (1): Air-flow rate / Static vacuum	See relevant operating manual
Version without R / S module: measuring point for material delivery (2) Air flow rate:	0.60 - 0.90 m³/s
Version without R / S module: measuring point for material delivery (2) Static vacuum:	- 200 Pa
Version with R / S module: measuring point for material delivery (3) Air flow rate:	0.50 - 0.70 m³/s
Version with R / S module: measuring point for material delivery (3) Static vacuum:	- 200 Pa
Version with R / S module: measuring point for material delivery (3a) Static vacuum:	Static vacuum value dependent on the measuring point (3)

5 Lower blend module

5.1 Conveyor belt

5.1.1 Tools



Extension
Used for removing the conveyor belt rollers.

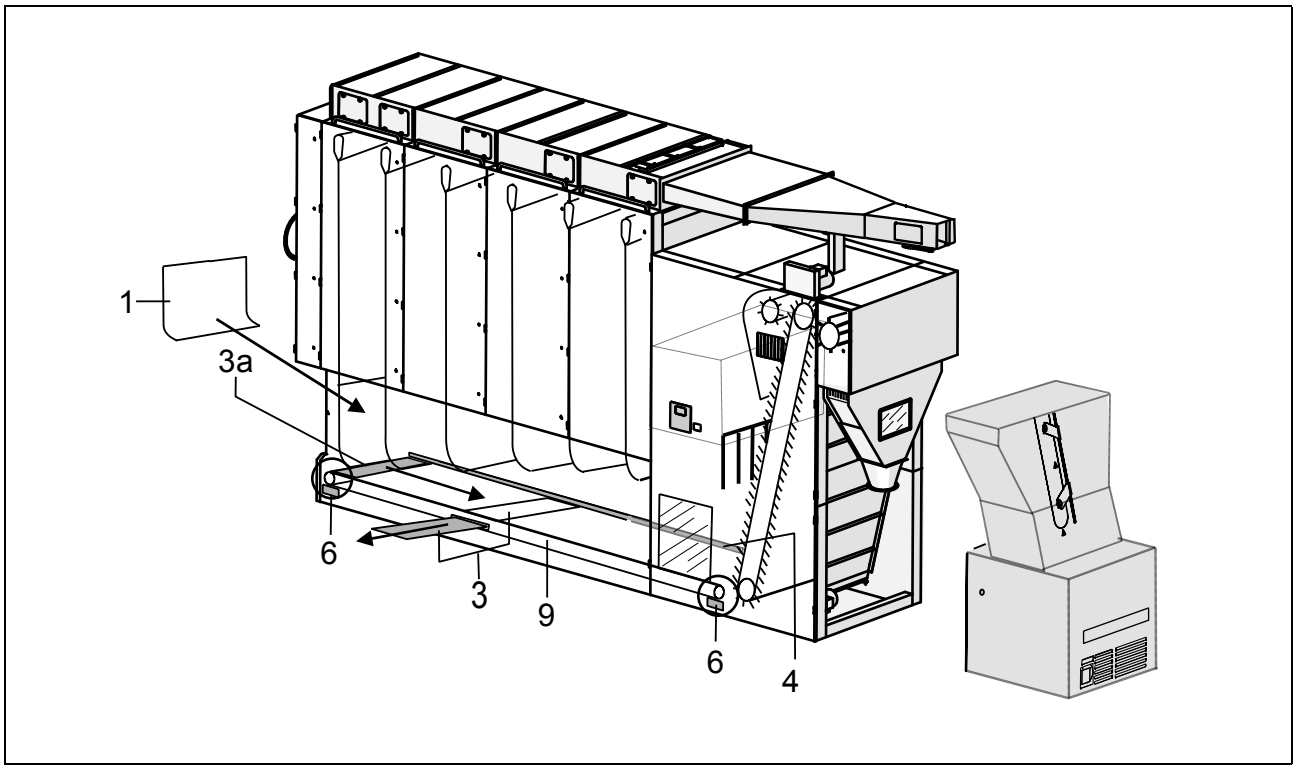
5.1.2 Removing the conveyor belt

WARNING
Set the main switch to the “off” position and secure it with a lock.

Preparatory work

– Prior to dismantling, the material that is still in the machine must be removed.

Remove parts.



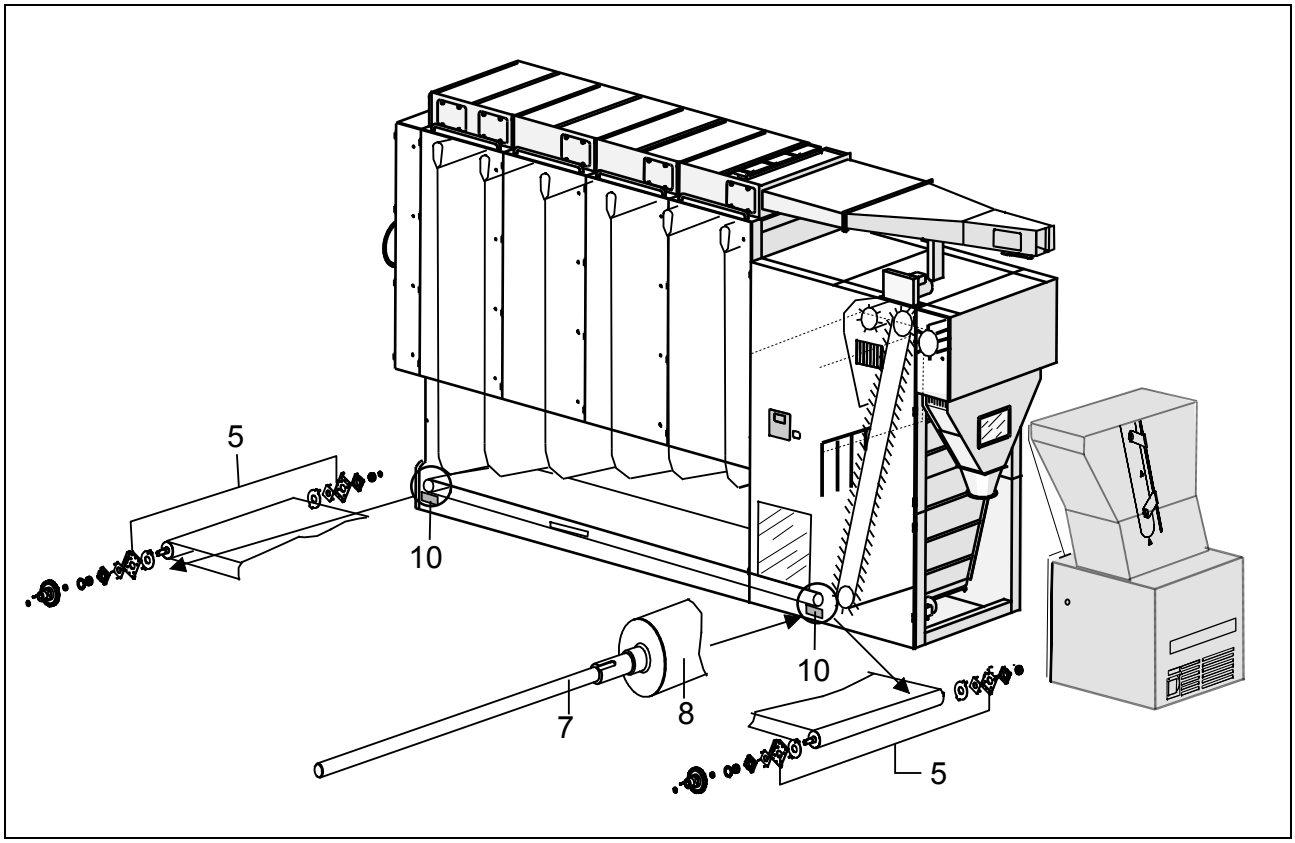
– Remove the rearmost bottom partition wall (1).

– Slacken the conveyor belt (9) at the rear bearing points (6).

– Remove all guide plates (3) from the machine from the side.
Note: The slide plates (3a) can be moved inside the machine. Consequently, several can be removed from the same place.

– Remove the cover brackets (4) from both sides.

Removing the conveyor belt rollers



– Prior to removing the bearing components (5), place wooden supports (10) beneath the conveyor belt rollers (8).

– Remove the parts of bearings (5).

  Note: Store the bearing points (5) separately. The bearings on the left side of the machine are fixed bearings and must not be mounted on the right side of the machine.

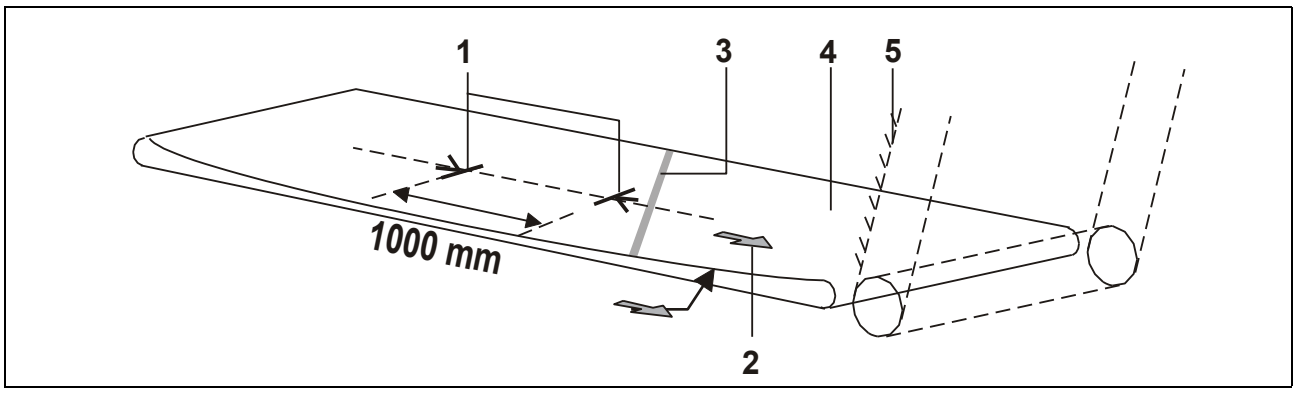
– Fit the supplied extensions (7) into the conveyor belt roller (8) and lift the conveyor belt roller out of the machine.

  ☞ Extension, Page 6/13

5.1.3 Installing the conveyor belt

WARNING
Set the main switch to the “off” position and secure it with a lock.

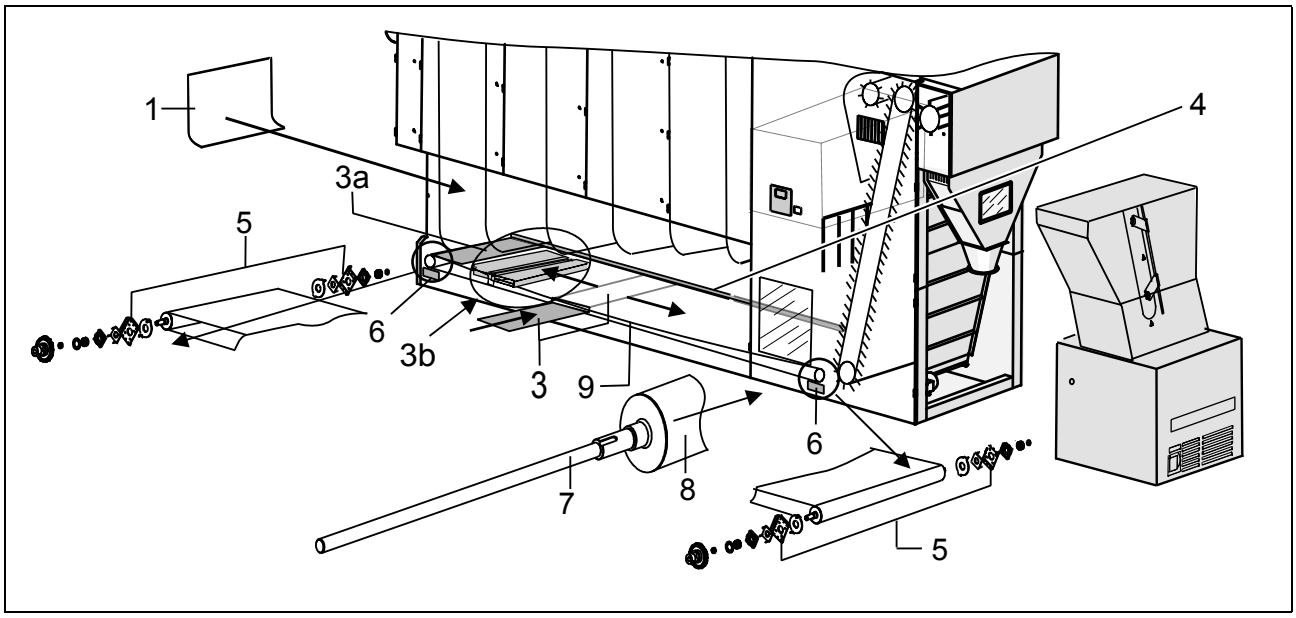
Preparing the conveyor belt



– Roll out the conveyor belt (4) and position it in the correct running direction.
Note: The feed belt is marked with an arrow (2) on its inner side. If the feed belt is motion, the arrow points towards the spiked lattice (5).

– Use the markings (1) affixed in the centre of the conveyor belt to tighten the belt.
Note: The markings (1) are located in the area of the belt splice (3).
☞ Adjusting the distance between the conveyor belt and the spiked lattice (standard setting), Page 6/21

Fitting the conveyor belt and slide plates and mounting the conveyor belt rollers



– Place the wooden supports (6) so that these are positioned beneath the conveyor belt rollers.

– Fit the conveyor belt (9) in the machine.
  Note: Pay attention to the running direction.
– Install the cleaning unit (3b) at the delivery section.
– Firstly insert the conveyor belt roller (8) at the drive section of the conveyor belt, with the help of the extensions (7).
  ☞ Extension, Page 6/13
– Mount the bearings (5) on both sides.
  Note: The fixed bearing has to be mounted on the left side of the machine.
– Fit the narrower, rearmost slide plate (3a) (dark green in colour).
– Laterally insert all slide plates (3) in the machine.
  Note: The slide plates can be moved inside the machine. Consequently, several can be inserted at the same place.
– Mount the rear conveyor belt roller.
– Mount the bearings (5) on both sides.
  Note: The fixed bearing has to be mounted on the left side of the machine.

Standard setting for distance between conveyor belt and spiked lattice

– Check or adjust the standard setting.
  ☞ Adjusting the distance between the conveyor belt and the spiked lattice (standard setting), Page 6/21

Mounting cover brackets and rear wall

– Fit the cover brackets (4) and set their positions, so that they are 2.00 mm from the conveyor belt (9).
– Mount the rear wall (1).

Tightening the conveyor belt

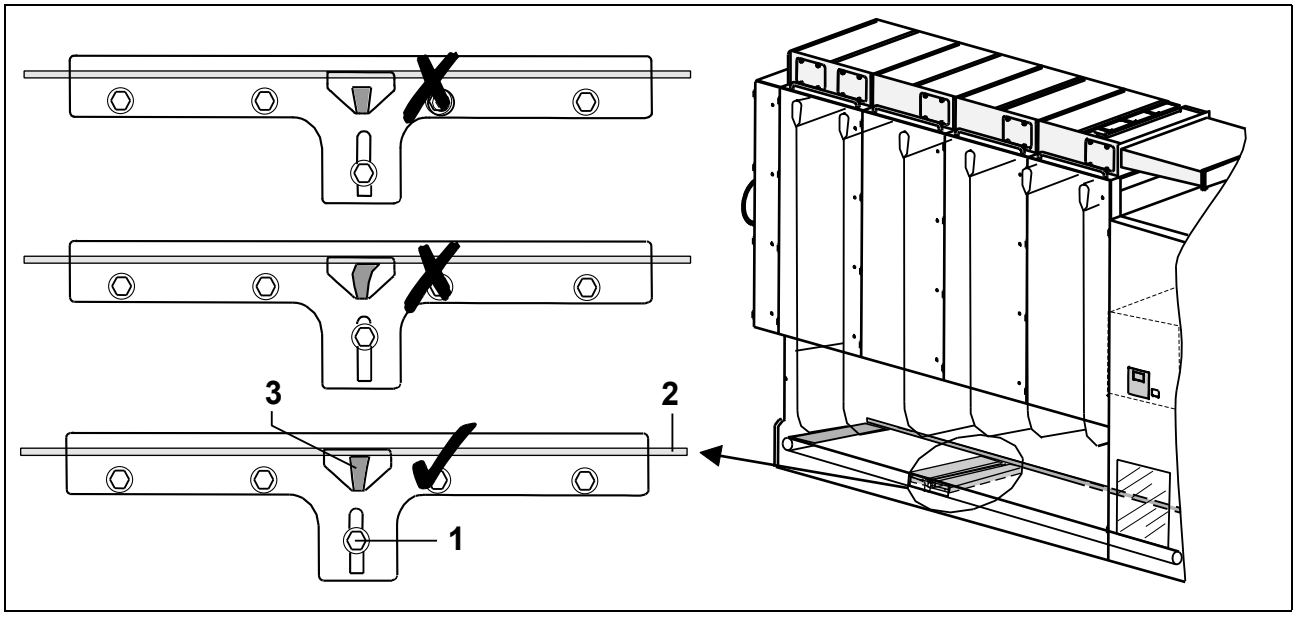
– Once all the work has been completed, tighten the conveyor belt (9) at the rear tensioning mechanism.
  ☞ Tension conveyor belt, Page 6/19
– Check the running of the conveyor belt (9).
  Note: Following start-up, the running of the conveyor belt must be checked frequently, and corrected whenever necessary.
  ☞ Aligning the conveyor belt, Page 6/20

5.1.4 Setting the cleaning unit for the conveyor belt

Material transport in the storage area, Page 3/4

WARNING
Set the main switch to the “off” position and secure it with a lock.

Sequence of steps



– Slightly loosen the screws (1) on both sides.

– On both sides, press the brush roller (3) lightly against the conveyor belt (2) and tighten the screws (1) firmly.

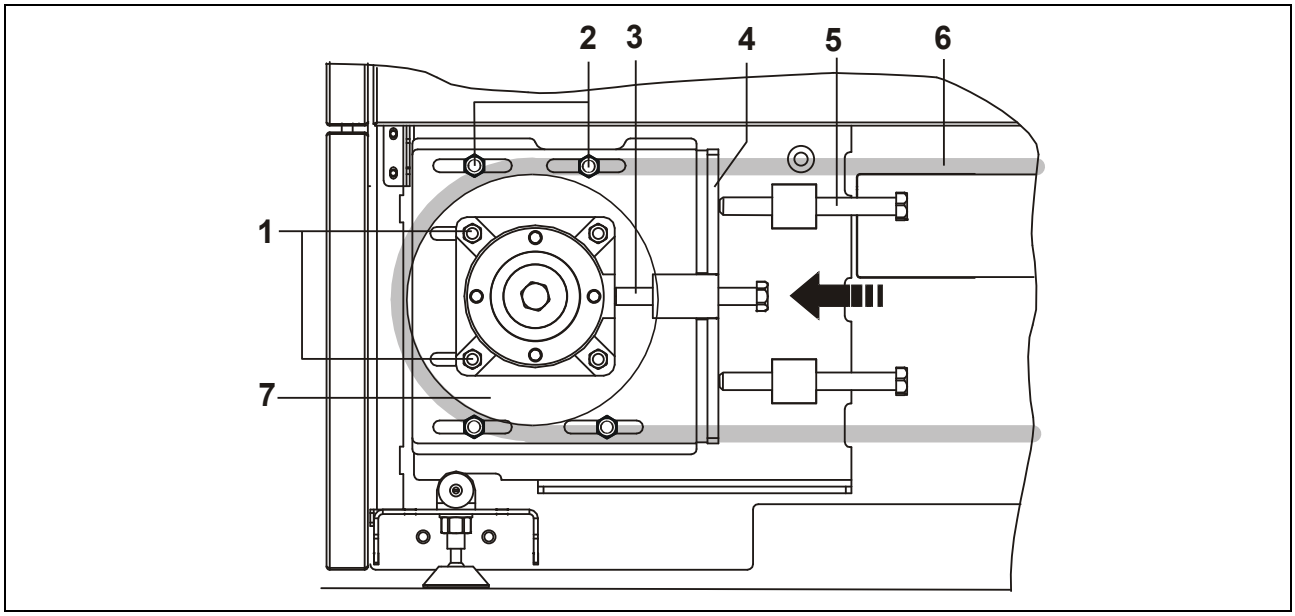
Note: Some pressure is required for cleaning purposes, but if too much pressure is applied, the brush roller will be damaged.

5.1.5 Tension conveyor belt

Production is not reached, Page 3/3
Material transport in the storage area, Page 3/4

Bolts (5) are used to pre-tension the conveyor belt (6). Bolts (3) are used to make the final setting for the tension.

Tensioning the conveyor belt (standard setting)



– Loosen the nuts(1) and turn back the screws.(3).

– Push back the conveyor belt roller (7) as far as possible.

– Loosen all nuts(2).

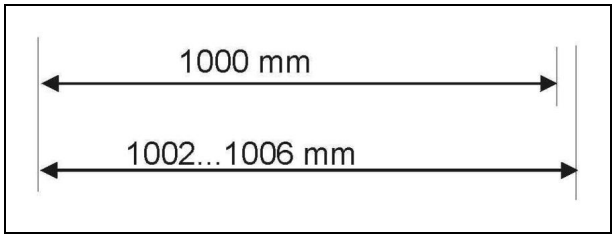
– Use the adjusting bolts (5) to move and position the bearing plate (4) in parallel until the conveyor belt (6) is prestressed.

– Tighten the nuts(2).

Correctly tensioning the conveyor belt

– Use the adjusting bolts (3) to push the conveyor belt roller (7) in parallel to the rear until the correct tension is obtained.

Conveyor belt tension	0.20 - 0.60 %



Conveyor belt tension

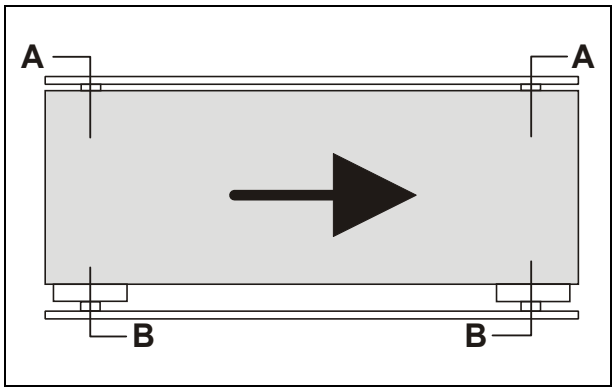
– Observe the correctly tensioned conveyor belt and align, if necessary.

5.1.6 Aligning the conveyor belt

Production is not reached, Page 3/3
Material transport in the storage area, Page 3/4

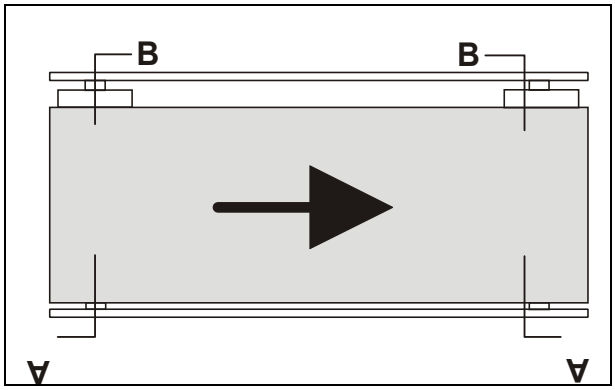
Once it is determined that the conveyor belt is offset in one direction, the conveyor belt has to be properly aligned in small steps. When doing this, however, the proper tension must not be exceeded.

The conveyor belt runs to the left.



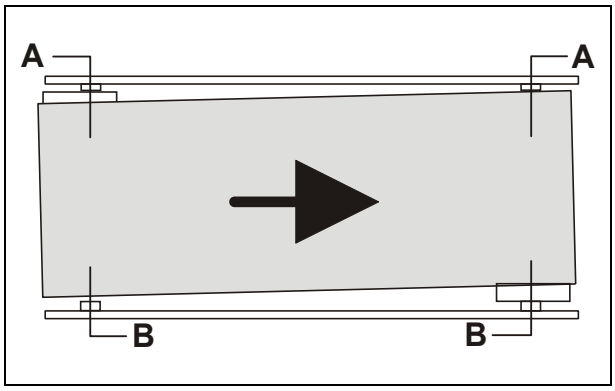
– Apply slight tension to the tension points «A» and at tension points «B» relax by the same distance.
Note: After aligning, observe how the conveyor belt runs over an extended time and correct it, if necessary.

The conveyor belt runs to the right.



– Apply slight tension to the tension points «A» and at tension points «B» relax by the same distance.
Note: After aligning, observe how the conveyor belt runs over an extended time and correct it, if necessary.

The conveyor belt is running transversely

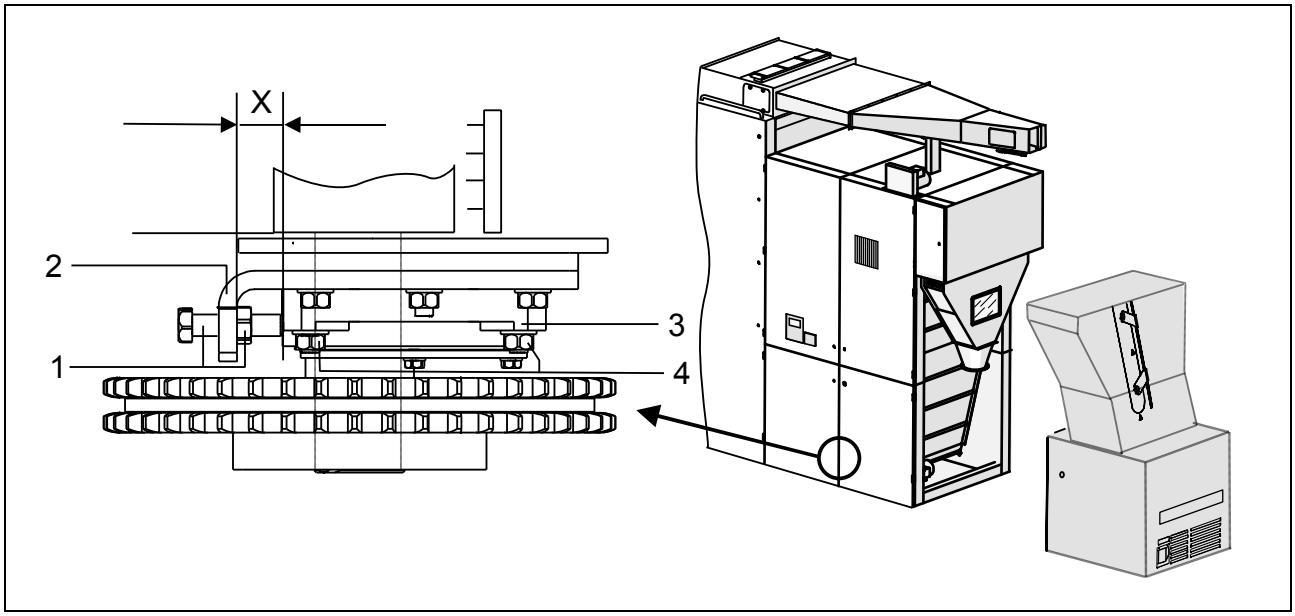


– Apply slight tension to the tension points «A» and at tension points «B» relax by the same distance.
Note: After aligning, observe how the conveyor belt runs over an extended time and correct it, if necessary.

5.1.7 Adjusting the distance between the conveyor belt and the spiked lattice (standard setting)

Settings, Page 3/3

WARNING
Set the main switch to the “off” position and secure it with a lock.



After replacement of the conveyor belt, the standard setting must be checked and/or adjusted.

Carry out a standard adjustment

– Loosen the nuts(4).

– Using the screw and the nut (1) adjust the distance (X) between the bearing plate (3) and the carrier (2).

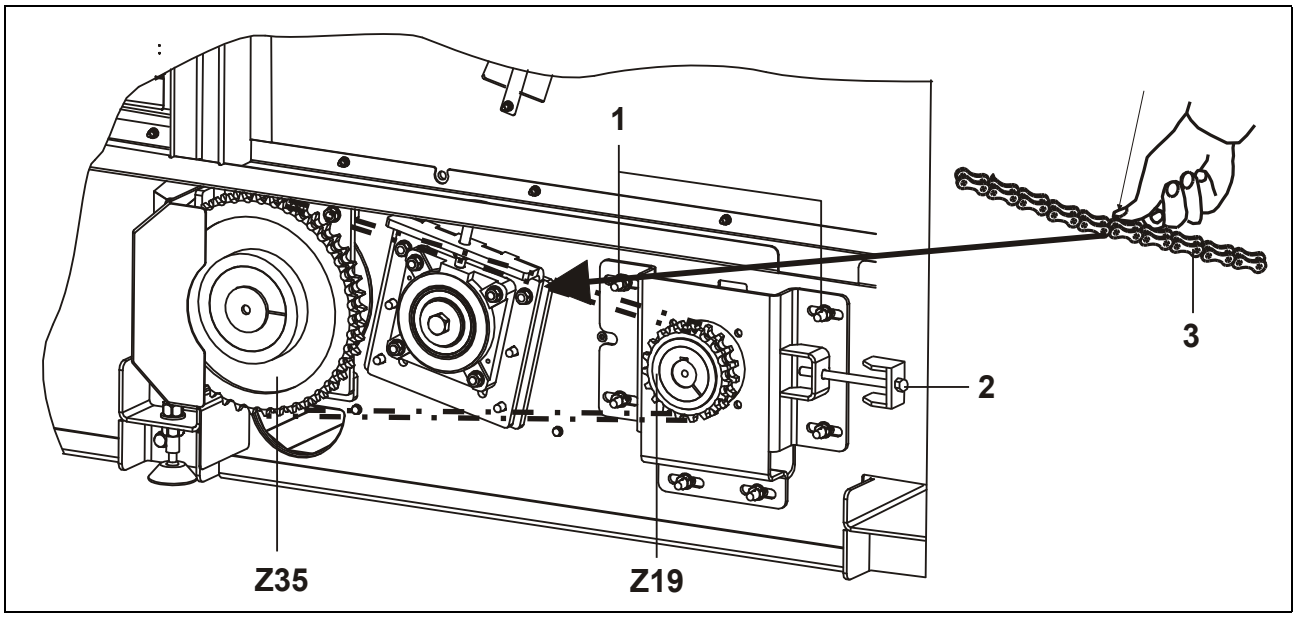
Distance X: Standard setting for distance between conveyor belt and spiked lattice (on both sides)

Distance X (both sides)	30.0 mm

5.1.8 Conveyor belt drive

5.1.8.1 Tightening the chain

Material transport in the storage area, Page 3/4



Sequence of steps

– Loosen all nuts (1).

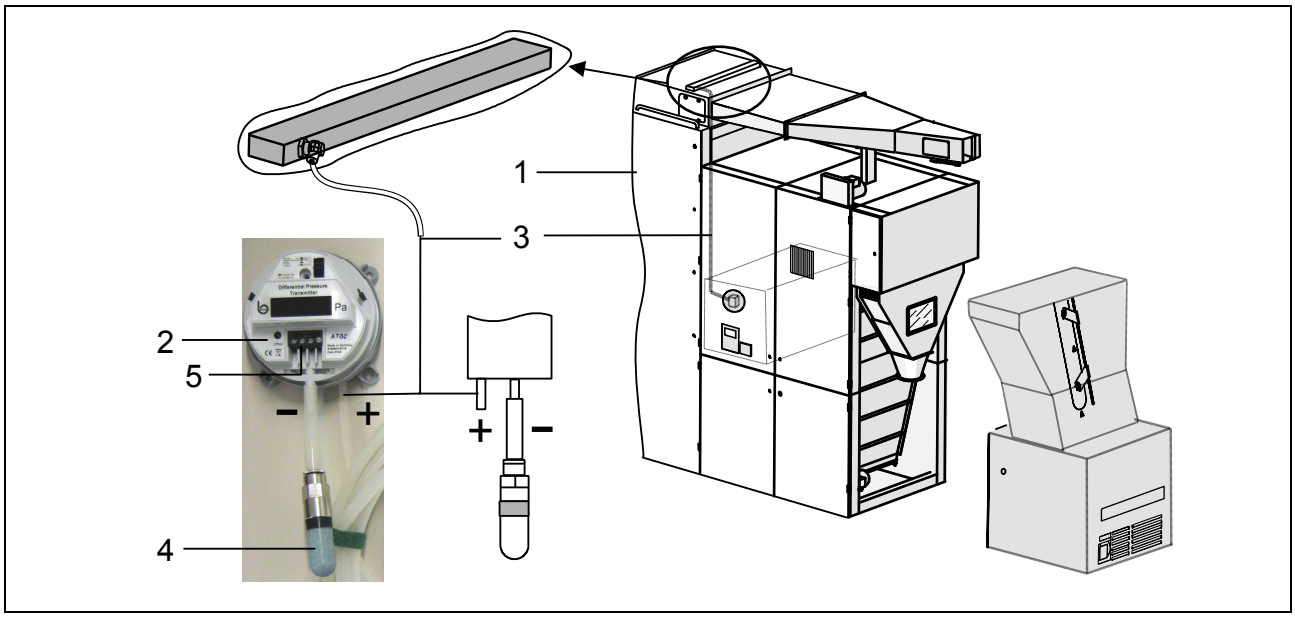
– Use the screw (2) to tighten the chain (3).
Note: Do not tighten the chain (3) to such a degree that it cannot be pressed inwards.

6 Upper blend module

6.1 Material entry

6.1.1 Description

Purpose: Storage pressure monitoring



+	*Connection point for plastic hose (3)*	*4*	*Dust filter at connection point (-)*
1	*Storage*	*5*	*Electrical connections*
2	*Pressure sensor in electrical panel*		
3	*Plastic hose running to the pressure-reduction device housing*		

The pressure sensor (2) monitors the excess pressure in storage bin (1). The supply of material to the UNImix is controlled by taking into account the parameter set for excess pressure.

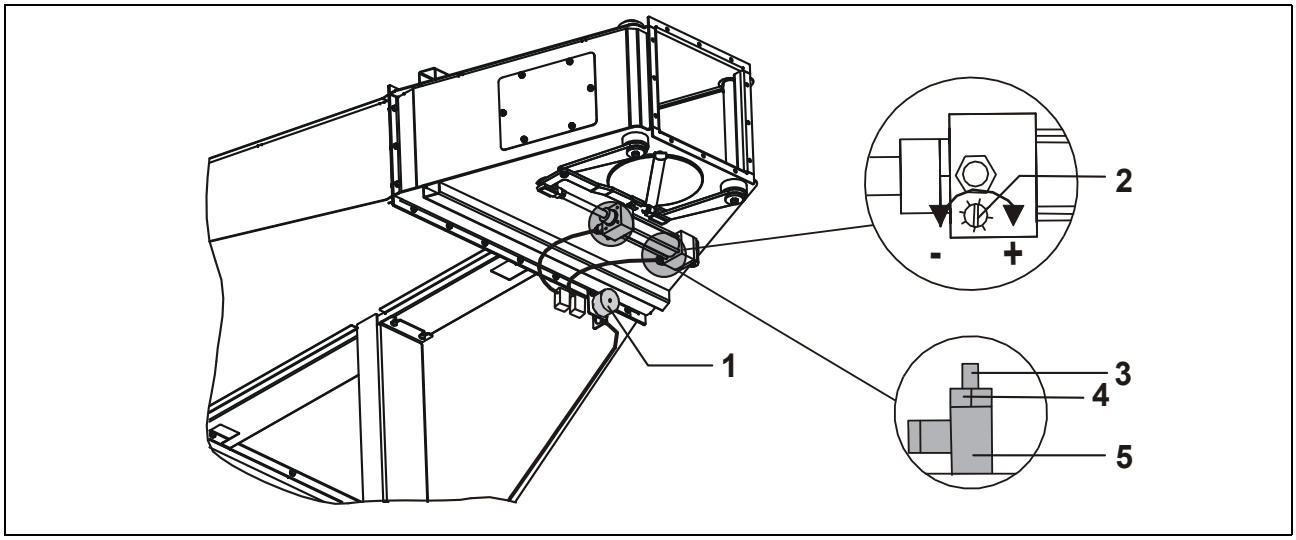
6.1.2 Setting the distributor flap

Storage not adequately filled, Page 3/5

In order to distribute the material in the storage unit, the program-controlled flaps swivel back and forth. The pause duration for the flap on either side of the machine can be set via a data screen.

Setting aim: Uniform distribution of the material in the storage unit.

Setting the swivel motion of the flaps



– **Prerequisite:** Select the data screen. .

40.4, Page 2/67

Set the pause duration for the flap on either side of the machine via the data screen. (The relative positions of the flaps are determined as a percentage.)

Note: The storage unit must be evenly filled. Observe the filling process over a long period.

Setting the regulating valve

– Set the pressure at the regulating valve (1) to 3.0 bars.

Setting the end-position damping (standard setting)

– Insert the screw (2) completely and then loosen it by 3 turns.

Note: The damping is correctly set, if the flaps move easily but gently towards the end positions. If necessary, adjust accordingly.

Restriction settings (standard settings)

– Loosen nuts (4).

– Insert the screw (3) completely and then loosen it by 8 turns.

Note: The restriction settings are correct, if each flap completes its back-and-forth motion within a period of 3 seconds. If necessary, adjust accordingly.

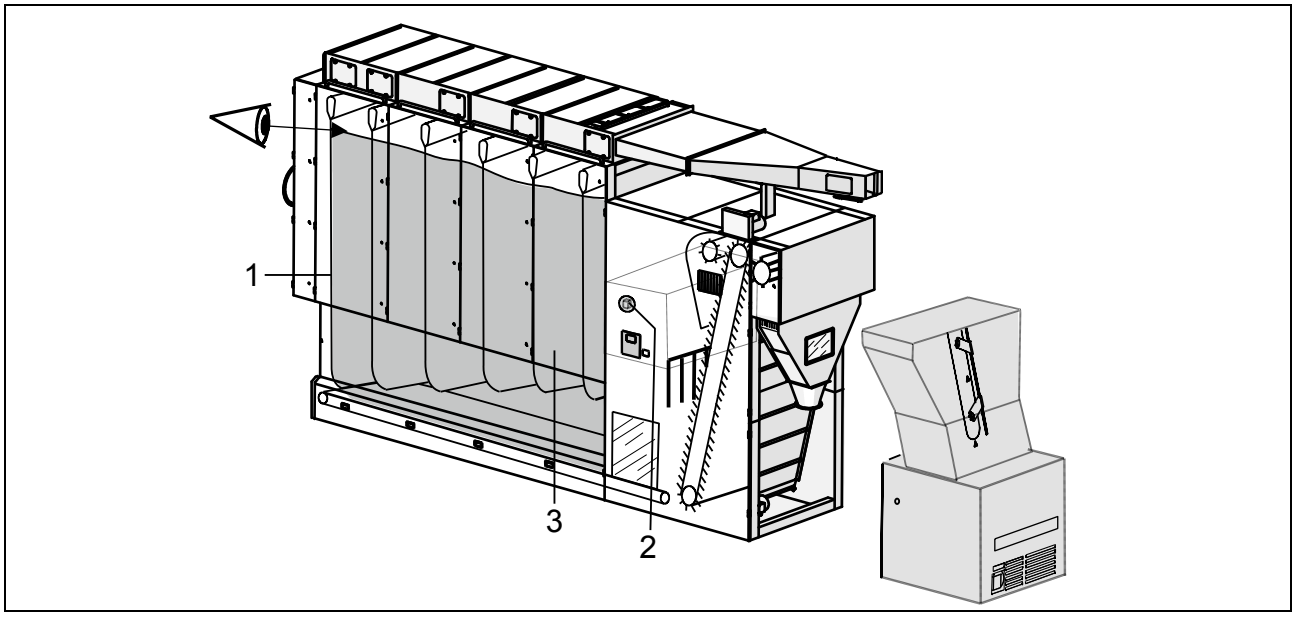
6.1.3 Adjust the pressure sensor

Production is not reached, Page 3/3
Storage not adequately filled, Page 3/5
Description Material entry, Page 6/23

By means of the correct adjustment of the pressure sensor (2) filling of the storage (1) is influenced.

Setting aim: The storage unit (1) should be filled as much as possible. However, blockages around the material inlet are to be avoided.

Determining the fill height



– Check the fill height in the storage unit (1) and the distribution in the chambers (3).

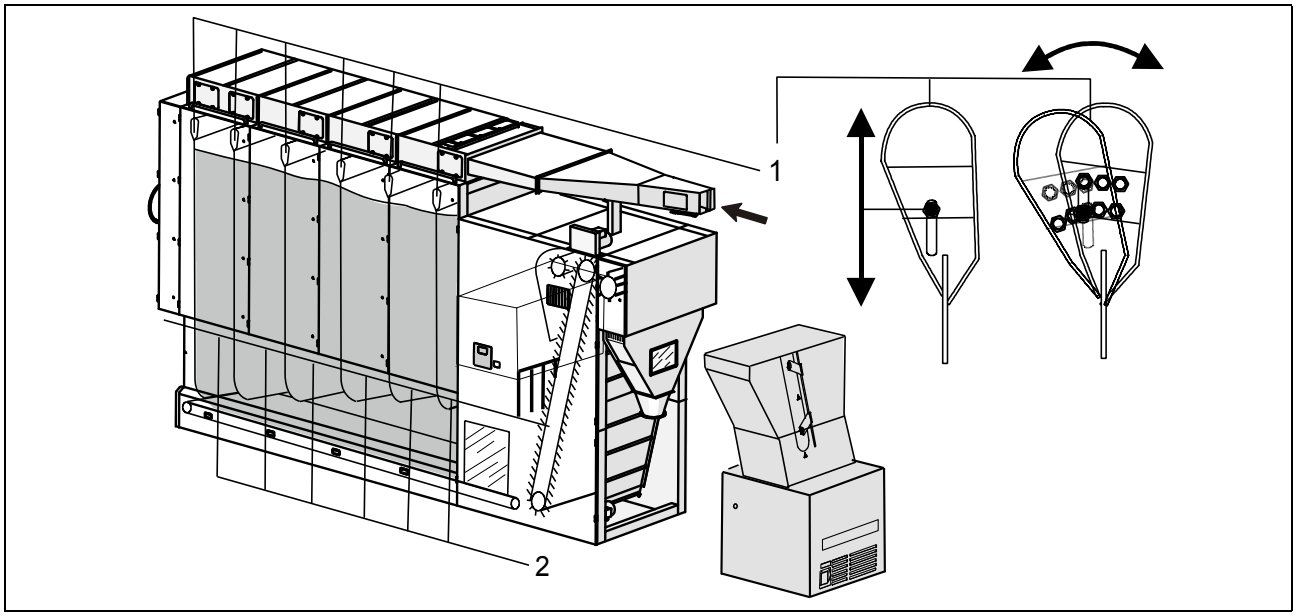
Adjust the pressure sensor

– Based on the filling in the storage (1) increase or reduce the value in the corresponding data screen.
Note: If the filling in the storage is too deep, a higher value must be set in the data screen.
40.3, Page 2/67

6.2 Separating vanes

6.2.1 Description

Purpose: To influence the filling of the chambers.



Method of operation

- The separating vanes (1) can be adjusted in height and in three different positions. Before the separating vanes are adjusted, the filling can be influenced by altering the fan speed. The filling of the individual chambers (2) can be subsequently assessed. The separating vanes (1) are to be adjusted according to the filling process. The most favourable settings are to be determined by trial and error.

6.2.2 Adjust the separating vanes

- Production is not reached, Page 3/3
- Blockages in the machine, Page 3/4
- Storage not adequately filled, Page 3/5

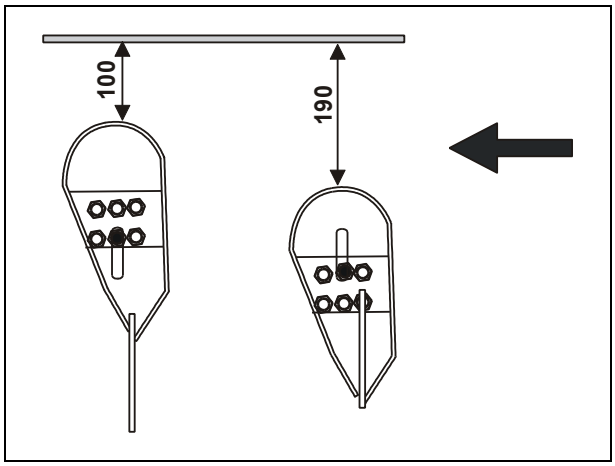
WARNING
Set the main switch to the “off” position and secure it with a lock.

Description Separating vanes, Page 6/26

The separating vanes can be adjusted in height and in three different positions. The best settings must be determined by trial and error.

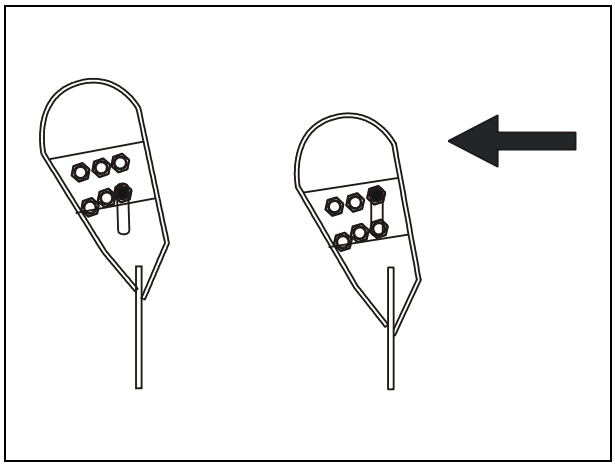
Setting aim: The separating vanes must be adjusted so that all chambers are filled as uniformly as possible.

Set the height of the separating vanes. (Standard setting all materials)



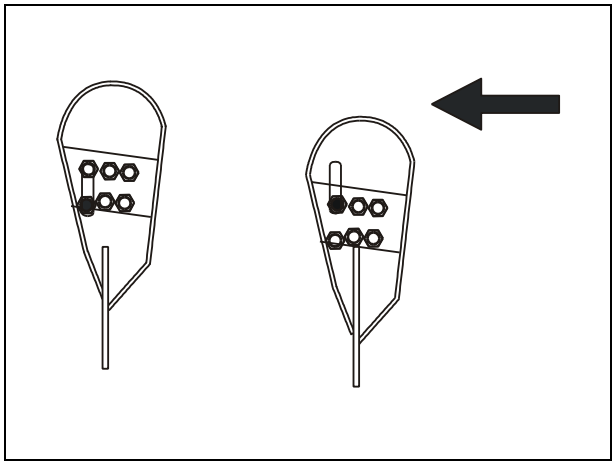
– Set the height so that the next chamber is optimally filled. Reducing the distance leads to an increase in air speed and vice versa.

Adjust the tilt to the rear.



– Adjust the tilt to the rear if the chambers overfill or if the material remains on the separating vanes.

Adjust the tilt forward

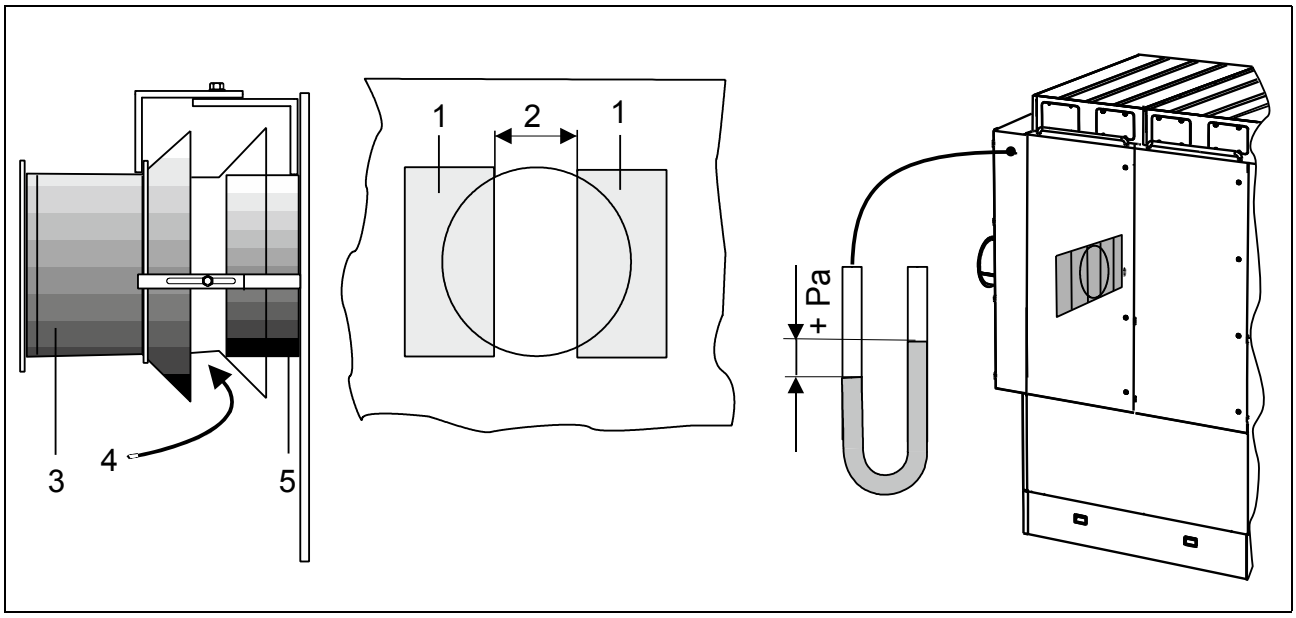


– Adjust the tilt forward if a better separation of the material is required at that point.

6.3 Exhaust air

6.3.1 Exhaust air

- Production is not reached, Page 3/3
- Blockages in the machine, Page 3/4
- Storage not adequately filled, Page 3/5
- Open transfer, Page 3/5



The pressure can be set using the cone tube (3) for the secondary air and the sliders (1). With the transfer (4) open dust-laden air must not be allowed to blow out. At all events, the cone (3) must be positioned closer.

Setting aim: There should be a slight overpressure in the exhaust air duct («X»)

Exhaust air

Overpressure	+20 - +40 Pa

7 Delivery section

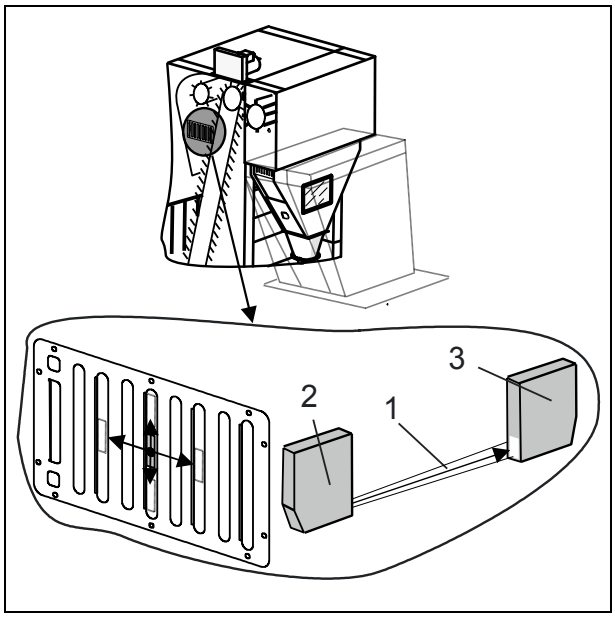
7.1 Making fill height and fill quantity settings for the dynamic storage unit

Dynamic storage unit at spiked lattice, Page 3/5

The fill quantity in the dynamic storage unit has to be greater for large production than for small production.

The positions of the light barriers (2) and (3) affect the fill properties of the dynamic storage unit.The greater the distance of the light barrier from the spiked lattice, the larger the fill quantity in the dynamic storage unit. The conveyor belt transports no more material towards the spiked lattice, once the light beam (1) has been broken.

Sequence of steps



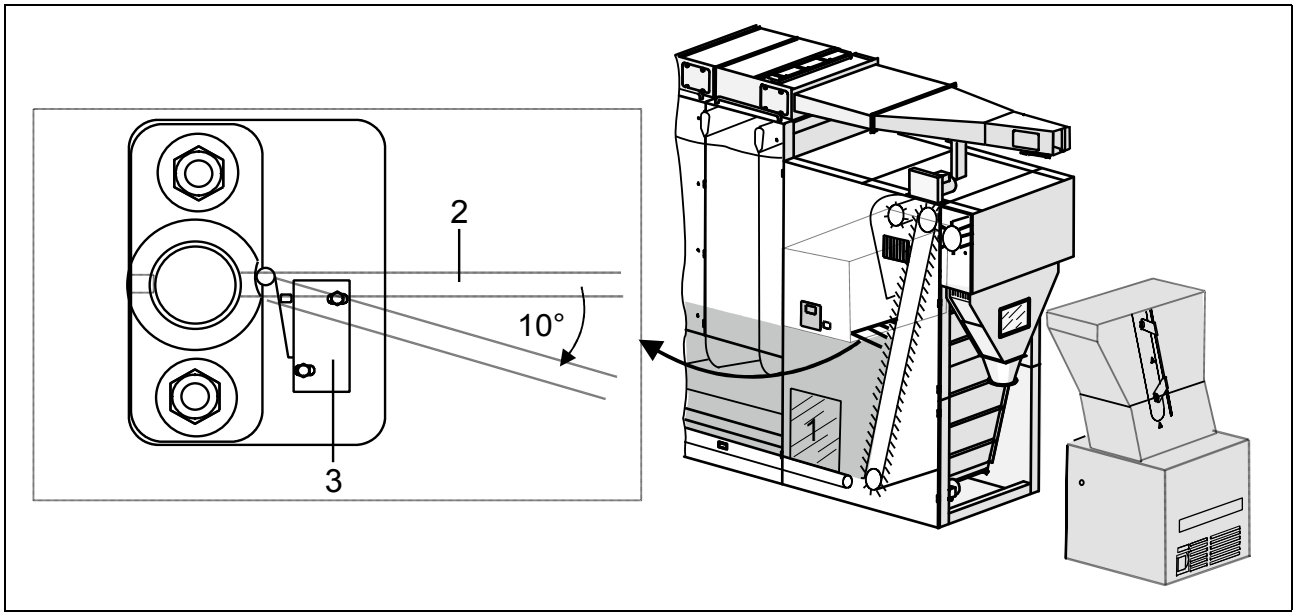
– Set the required fill height by appropriately adjusting the horizontal and / or vertical positions of light barriers (2) and (3).

– Set the emitter (2) in such a way that the light beam (1) is directed towards the centre of the receiver(3).

7.2 Stripper rake

7.2.1 Description

Purpose: Material Retention



The rake (2) holds the material back to prevent large chunks of material being carried along by the spiked lattice

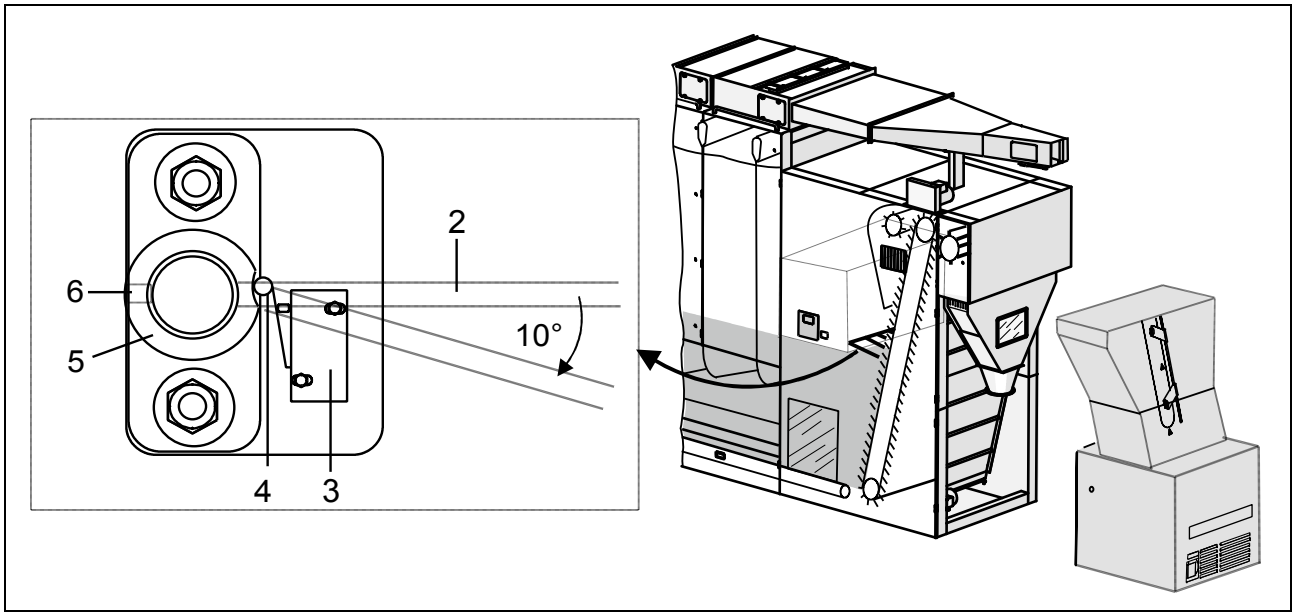
.

Method of operation

- As soon as there is an insufficient quantity of material (1) on the conveyor belt, the rake (2) is lowered. This causes the limit switch (3) to be pressed. The speed of the conveyor belt is increased via the control unit.

7.2.2 Adjust the stripper rake

Blockages in the machine, Page 3/4
Description Stripper rake, Page 6/30



Sequence of steps

– Urge the rakes (2) completely upward.

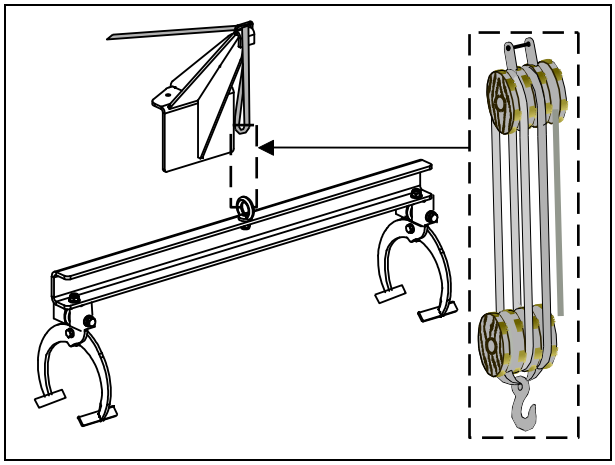
– Loosen the gudgeon (6).

– Adjust the setting collar (5) so that the terminal switch roller (4) lies in the recess.

– Tighten the gudgeon (6). The limit switch (3) must not respond until the rake has moved down about 10°.

7.3 Spike lattice

7.3.1 Tools

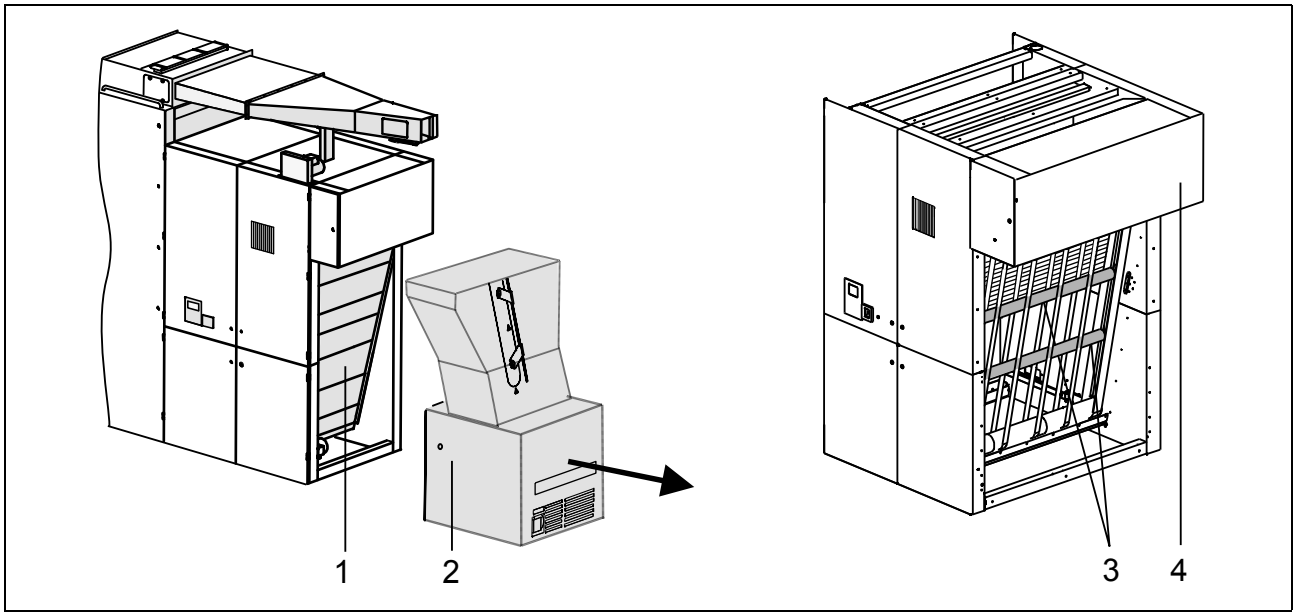


Suspension device for the B 76
Removal of spiked lattice for the B 76

7.3.2 Remove the spiked lattice.

WARNING
Set the main switch to the “off” position and secure it with a lock.

Preparations

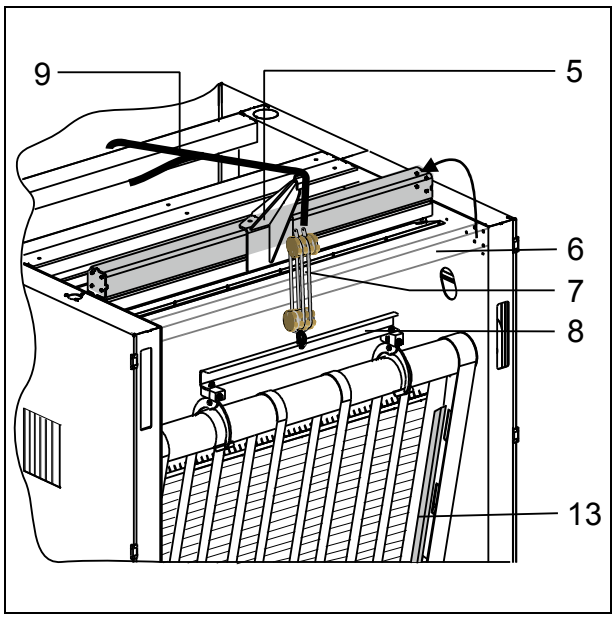


– The blender has to be completely empty.
– Remove the electrical connector from the module.
– Use the castor jacks to move the module (2) away from the blender.
– Unscrew the cover plates (1) which are now exposed.

– Remove the two supporting rollers (3).

– Unscrew the doffing unit (4).

Install the dismantling tool



– Remove the slide elements (13) on both sides.

– Remove the crossbar (6), place it on the rear crossbar and bolt tightly.

– Place the support (5) on the cross-member (6) and tighten firmly.

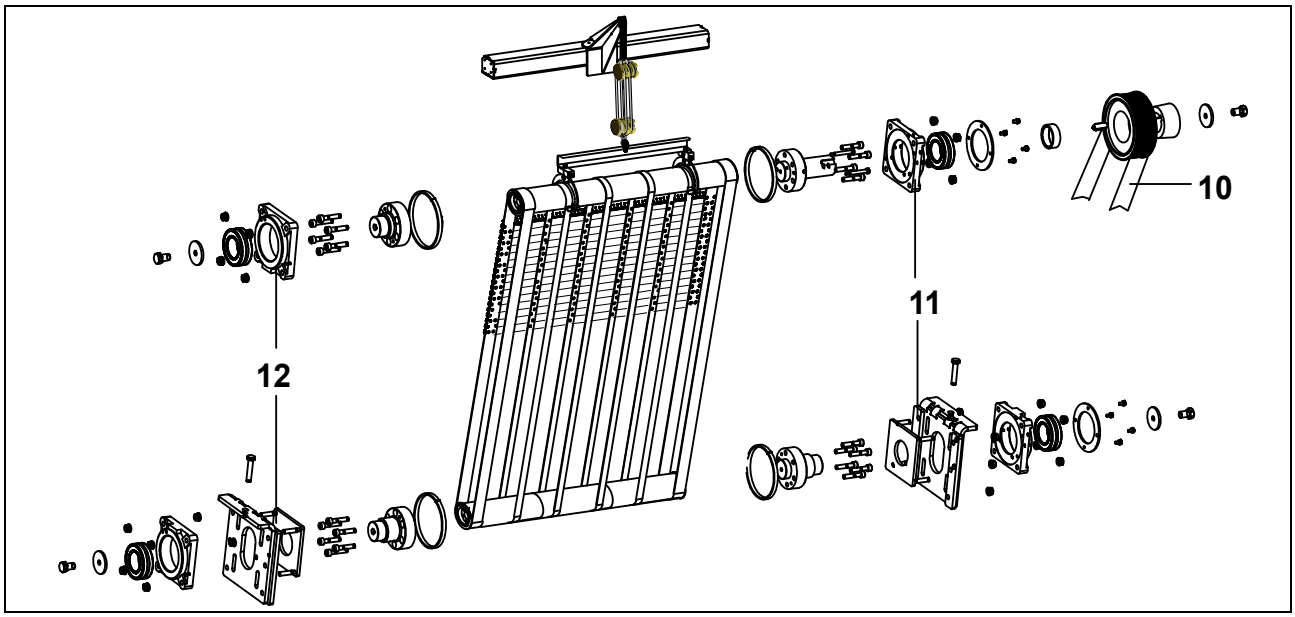
☞ Suspension device for the B 76, Page 6/32

– Pull the strap provided (9) through the guide in the support (5) and fasten it to the cross-member (6).

– Hang the pulley tackle (7) on the strap (9).

– Use the lifting device (8) to grip the spiked lattice together with the roller and tension slightly with the pulley tackle (7).

Remove bearings

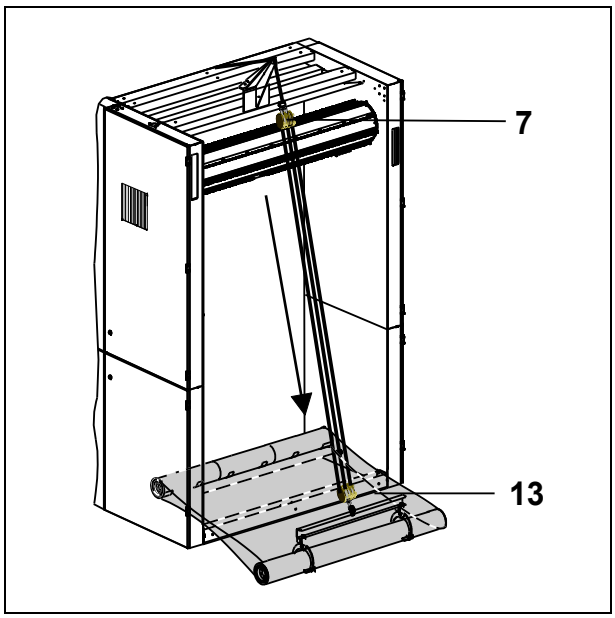


– Slacken the toothed belt (9):

– Remove the bearings (10) and (11) on both sides.

Note: Store the parts of the bearing points (10 / 11) separately. The bearing points (10) on the right side of the machine are fixed bearings and must not be confused with the bearing points (11) on the left side of the machine.

Lower the spiked lattice



– Lower the spiked lattice (13) using the pulley tackle (7) until it lies on the floor.

7.3.3 Install the spiked lattice

WARNING
Set the main switch to the “off” position and secure it with a lock.

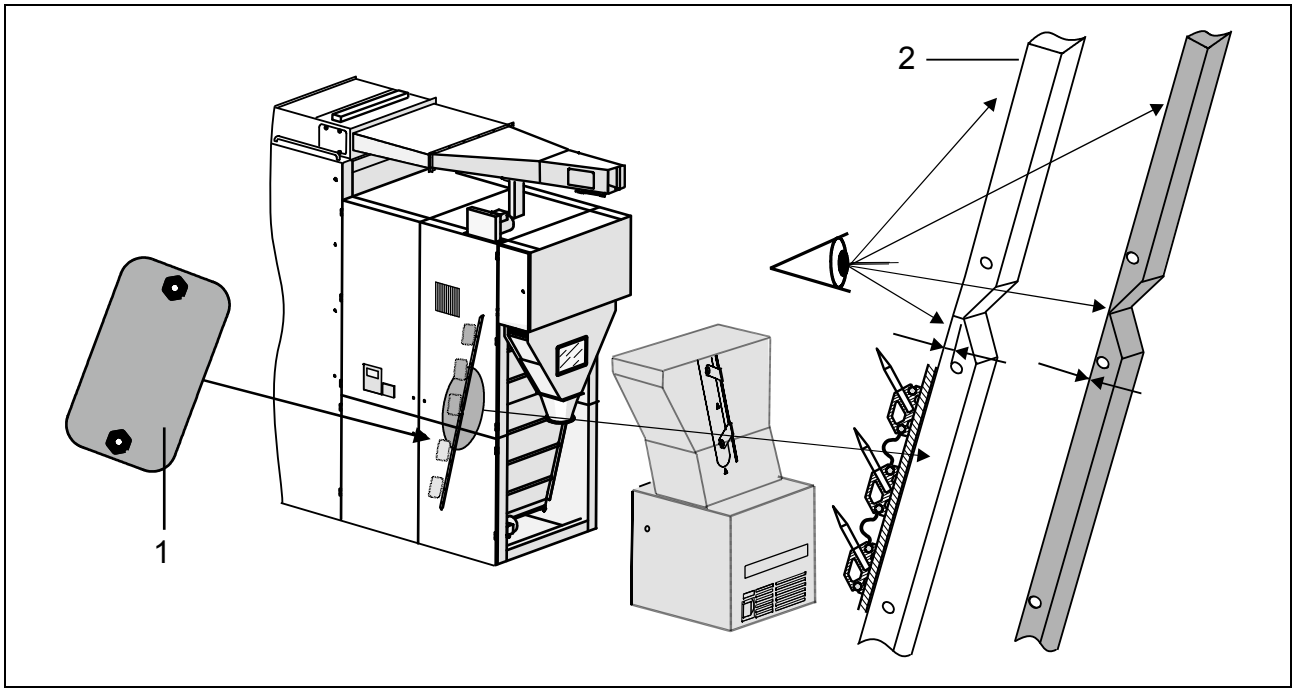
Spiked lattice

– Installation is done in the reverse order of dismantling.
Note: When mounting the bearing points, mount the fixed bearings on the right side of the machine.

7.3.4 Checking slide elements

Visually checking the slide elements

WARNING
Set the main switch to the “off” position and secure it with a lock.



– Remove the covers (1) on both sides.

– On both sides, visually check all of the sliding pieces (2).
Note: Use a torch!

Action
The slide elements show traces of wear.

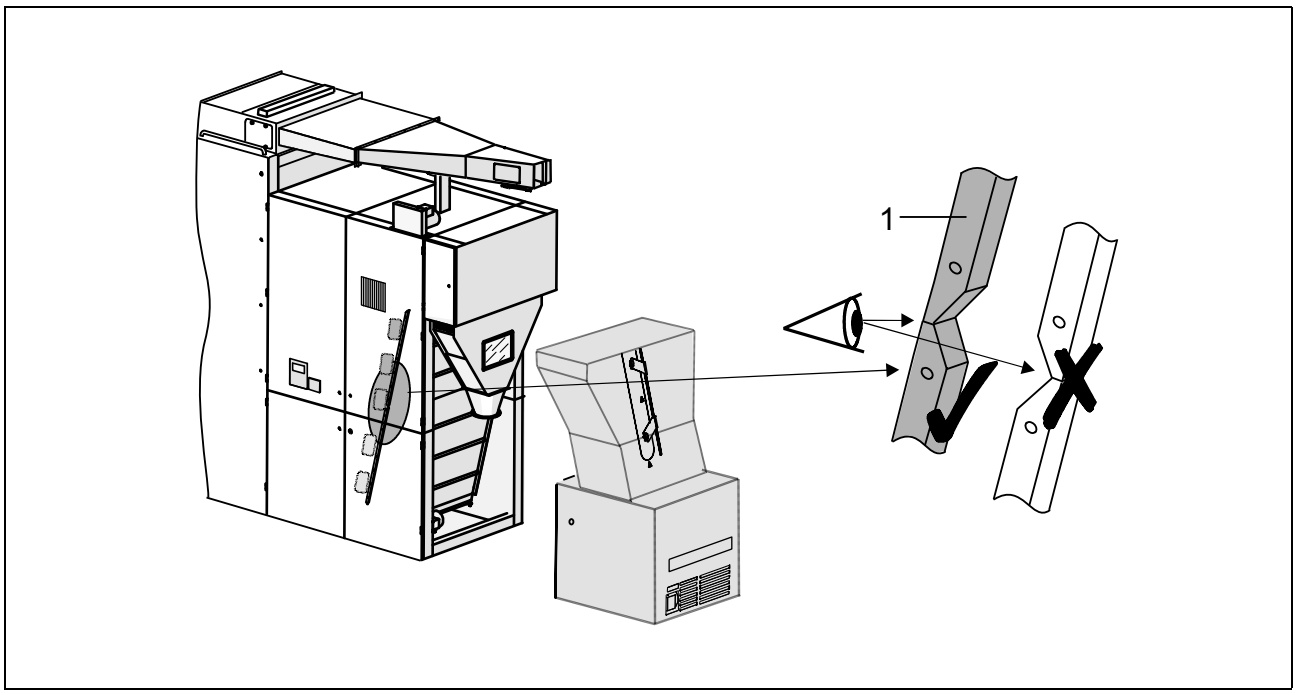
– Replace the slide elements before these become worn down to the fastening screws.
Note: The contact surfaces of the spiked lattice will be damaged if the slide elements are worn.
☞ Install the spiked lattice, Page 6/34

7.3.5 Fastening guide rails

Delivery section, Page 3/6

WARNING
Set the main switch to the “off” position and secure it with a lock.

Sequence of steps

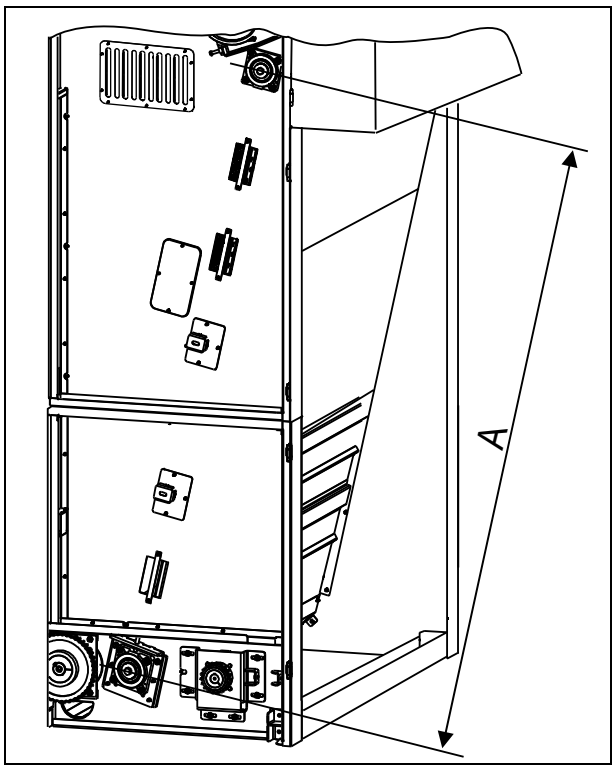


– Ensure that the guide rails (1) are correctly positioned when installing them.

7.3.6 Tension the spike lattice

Settings, Page 3/3

WARNING
Set the main switch to the “off” position and secure it with a lock.



Only apply tension at the bottom roller.

Setting aim: Correct Tension

Distance between centres

Distance between centres “A”: Upright lattice tension: 0.0 %	2483.0 mm
Distance between centres “A”: Upright lattice tension: 0.5 %	2495.0 mm
Distance between centres “A”: Upright lattice tension: 0.8 %	2502.0 mm

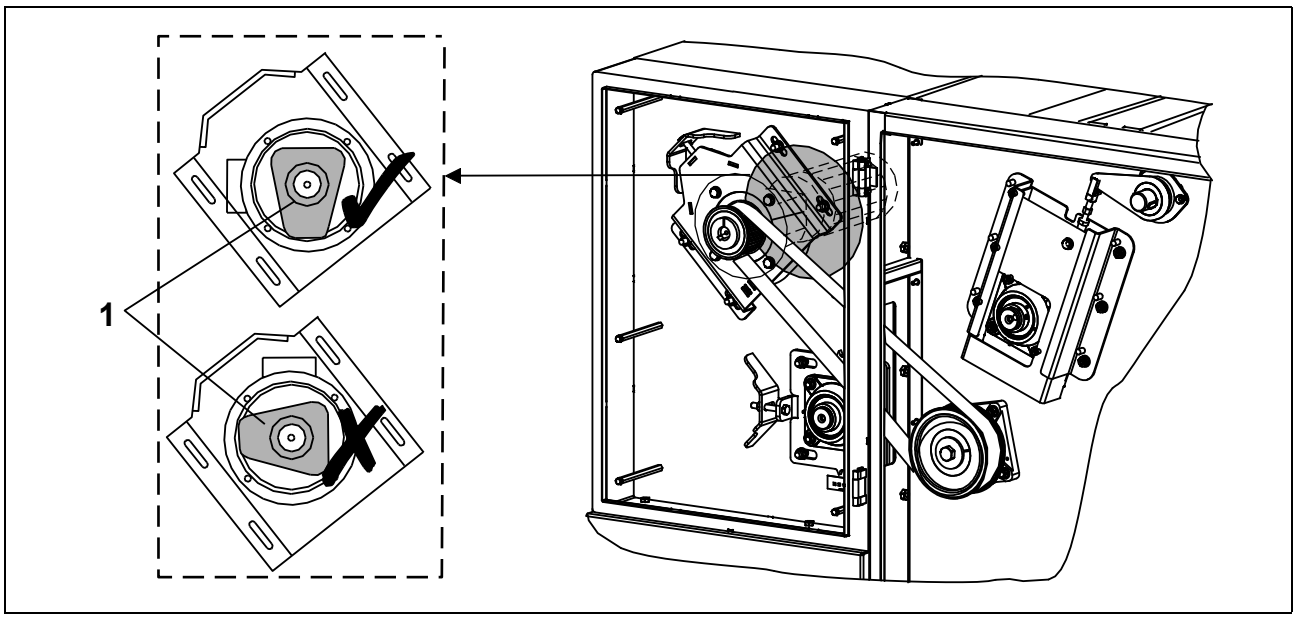
7.3.7 Drive unit for spiked lattice

Delivery section, Page 3/6

WARNING
Set the main switch to the “off” position and secure it with a lock.

In order to ensure lubrication of the gear wheels, install the motor and the gearbox in the position specified.

Sequence of steps

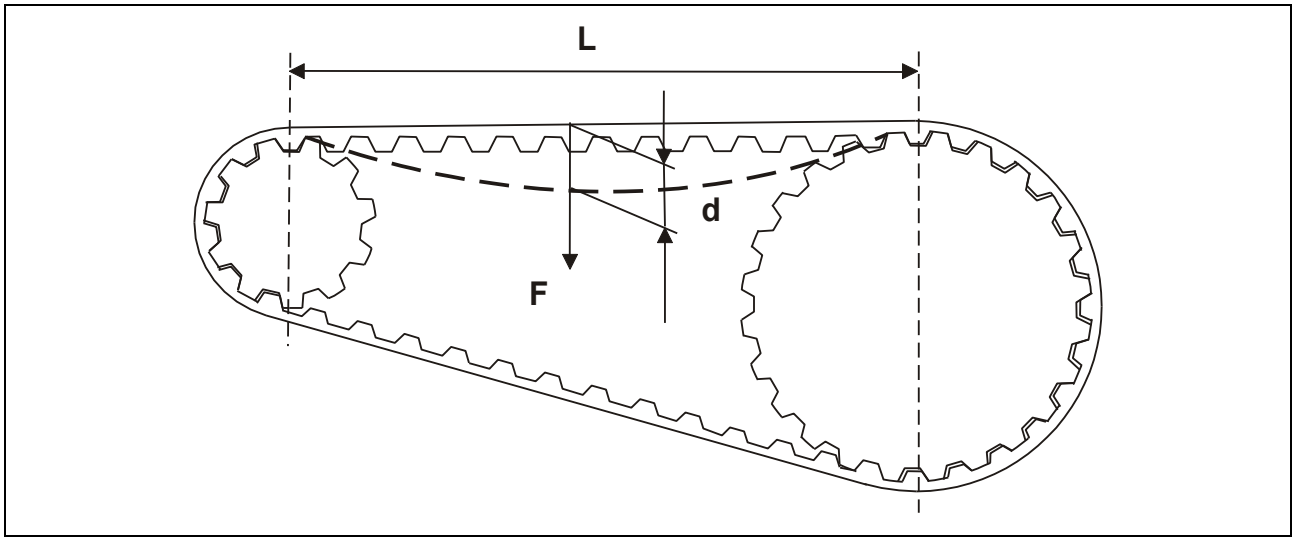


– Install the gear motor (1) so that the housing with the reserve oil supply is positioned at the bottom. (See diagram.)

7.3.8 Tighten the toothed belt drive of spiked lattice

Settings, Page 3/3

WARNING
Set the main switch to the “off” position and secure it with a lock.



Setting aim: Appropriate preliminary tensioning and maintenance of the belts are required to ensure an optimal service life and optimal power transfer. If the belts are too tight, bearings and belts may sustain damage. If the belts are too slack, the teeth of the belt may skip which could lead to faults and damage. In addition, care must be taken to ensure the cleanliness of belts and belt pulleys as well as to remove any dirt that has accumulated at the tooth base.

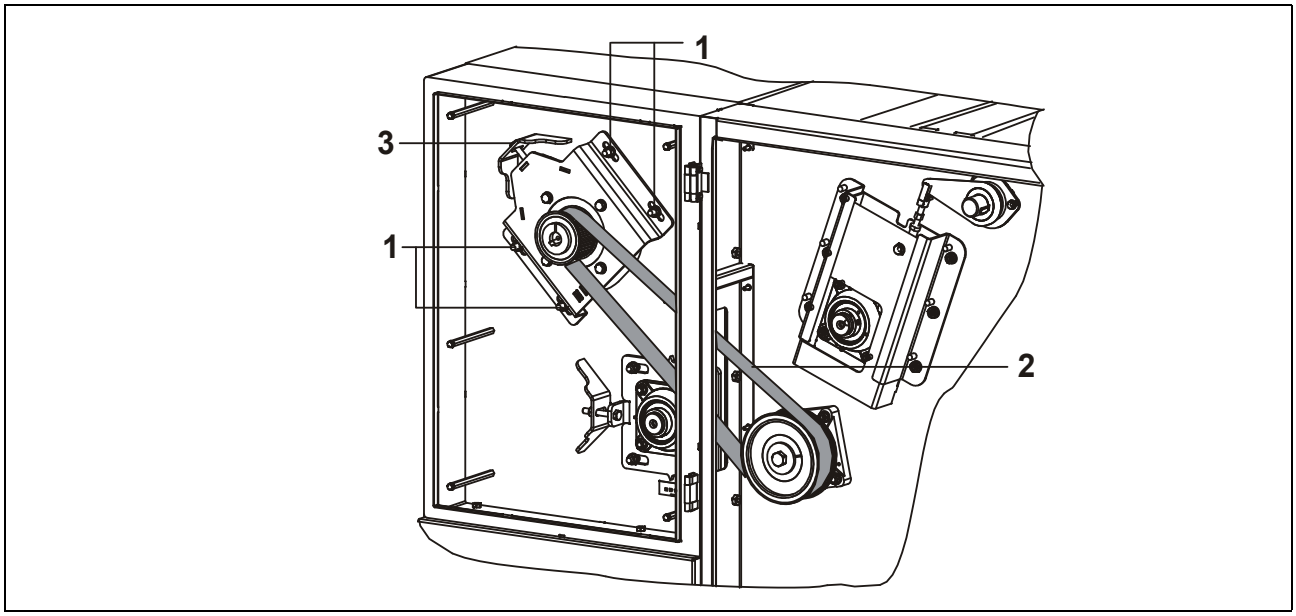
Deflection example of a toothed belt with a 640 mm distance between centres (L)

Distance between centres (L) 640 mm	Deflection (d) = approx. 1.5% of 640 = approx. 10 mm
Force (F)	Push in the belt carefully until some resistance can be felt.

Sequence of steps

– The length (L) of the toothed belt is determined by the axial spacing of the tooth wheels. In the center of this distance, the belt must be able to be deflected by approx. 1.5% of the length (L) with the force (F).

Sequence of steps



– Loosen screws (1).

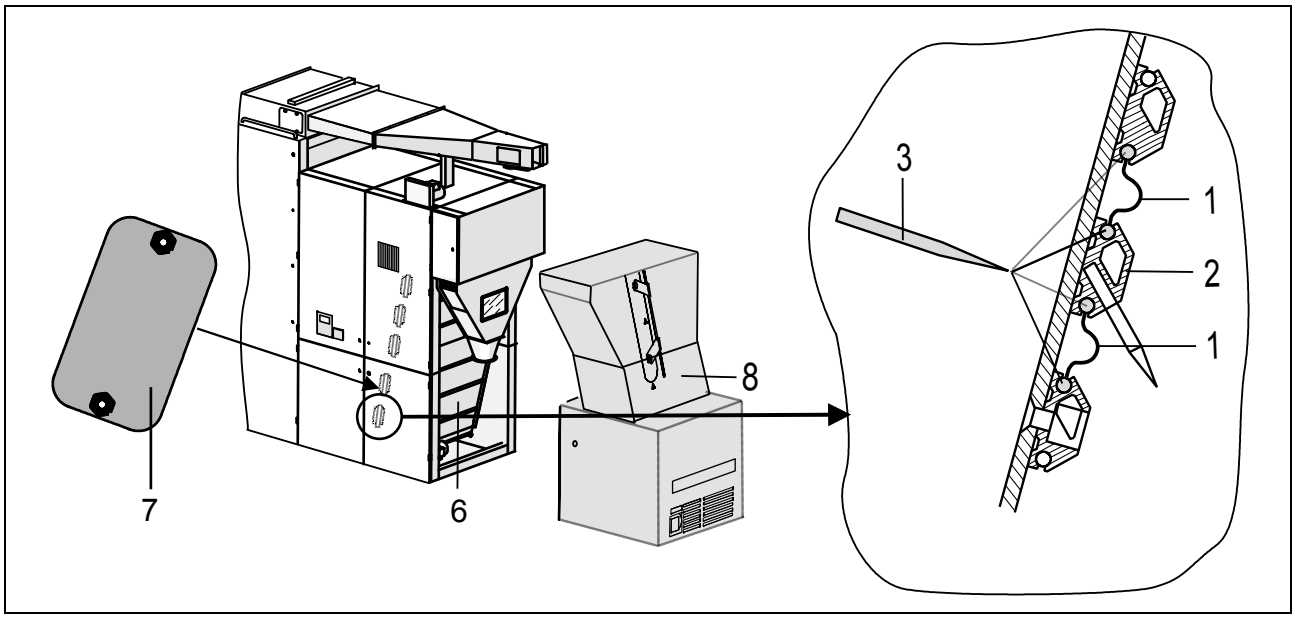
– Using the screws (3) tighten the toothed belt (2) in accordance with the specification.

7.3.9 Spiked bar

7.3.9.1 Remove the spike lattice.

WARNING
Set the main switch to the “off” position and secure it with a lock.

Sequence of steps



– The machine must be completely empty.

– Use the castor jacks to move the module (8) away from the blender.

– Unscrew the cover plates (6) which are now exposed.

– Completely slacken the spiked lattice.

– Move the defective spiked lattice (2) into the vicinity of opening (7) and remove the safety plate.

– Remove the safety spikes (3) above and underneath the spiked bar (2) to be dismantled. If necessary, cut the sealing strips (1).

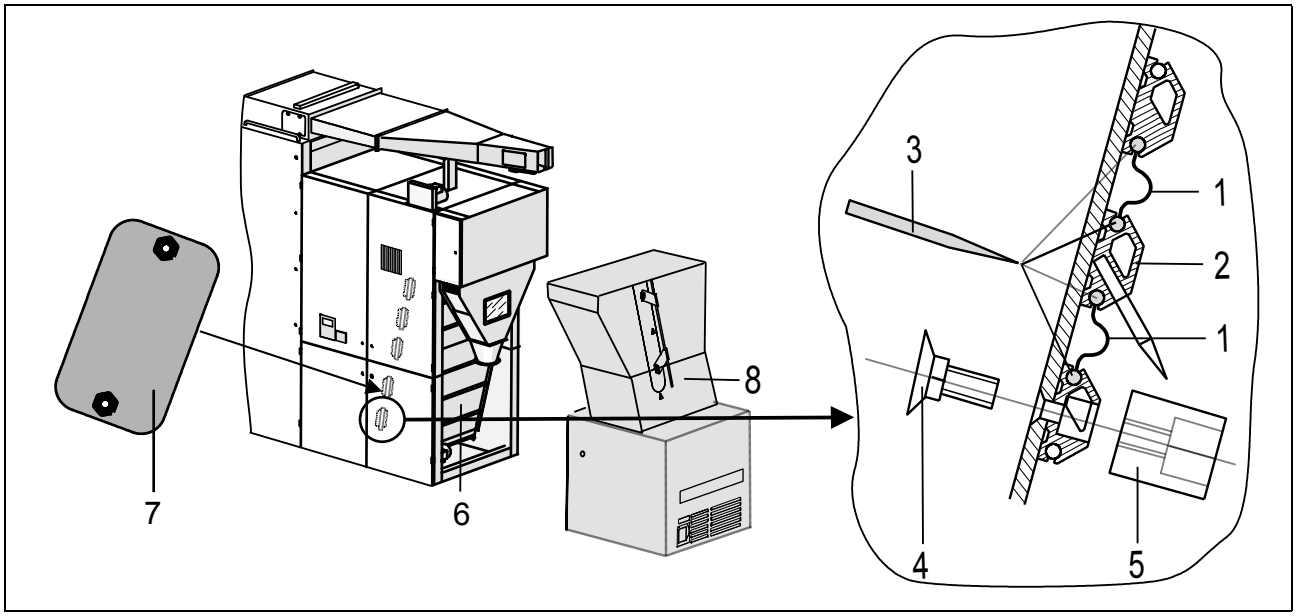
– Remove the spiked bar (2).

– Use pliers to remove the remaining sealing strips (1).

7.3.9.2 Install spike lattice

WARNING
Set the main switch to the “off” position and secure it with a lock.

Sequence of steps



– Mount the new spiked bar (2), the two sealing strips (1) and the threaded parts (4) and (5).
Note: With a drop of «Loctite 932» on the threads (low to moderate screw retention) secure the screws (4).

– Push the retaining pins (3) laterally and as far as possible into the sealing strips (1).

– It is imperative to tighten the special nut (5) at the correct torque.

Thread dimension	M5
torque	5 Nm

– Refit the removed parts (6) and (7).

– Move the module (8) back to the blender and screw it in place.
☞ Tension the spike lattice, Page 6/37

7.4 Opening roller

7.4.1 Position of the opening roller to the spiked lattice (standard setting)

Settings, Page 3/3

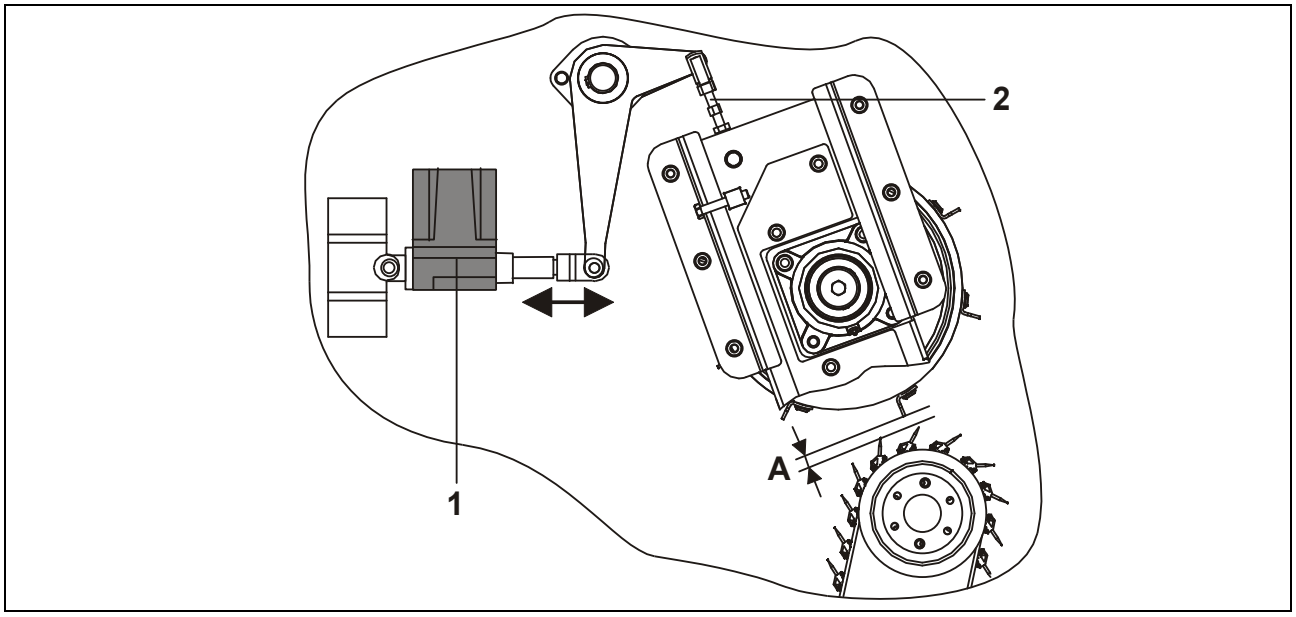
This is factory-set. The setting has to be checked only after replacement of the electric cylinder .

Preparatory work

– Introduce the electric cylinder entirely in the test program (data screen 82.5)

WARNING
Set the main switch to the “off” position and secure it with a lock.

Sequence of steps



– The electric cylinder (1) is retracted.
82.5, Page 2/73

– Using the universal rod (2) set the minimum spacing «A».

Distance “A”: Minimum distance between the tips of the upright lattices and the opening roll.	5.0 mm

7.4.2 Stop production

Production is not reached, Page 3/3

Blockages in the machine, Page 3/4

If the speed of the spiked lattice is not sufficient to achieve a specific production, the degree of opening for the material has to be changed.

The opening roller setting primarily affects the degree of opening. For constant spiked-lattice speeds, the production rate is also affected. If the opening roller is positioned closer to the spiked lattice, the tufts will be smaller. In some circumstances, the spiked-lattice speed has to be increased so that the required production rate can be achieved. 0.0 => lowest degree of opening for the material. 1.0 => highest degree of opening.

Setting aim: By adjusting the parameter values appropriately, the ideal setting for the production can achieved. No parameter should be set to its maximum value, however.

Setting the speed of the spiked lattice (production level: UNImix and R/S module)

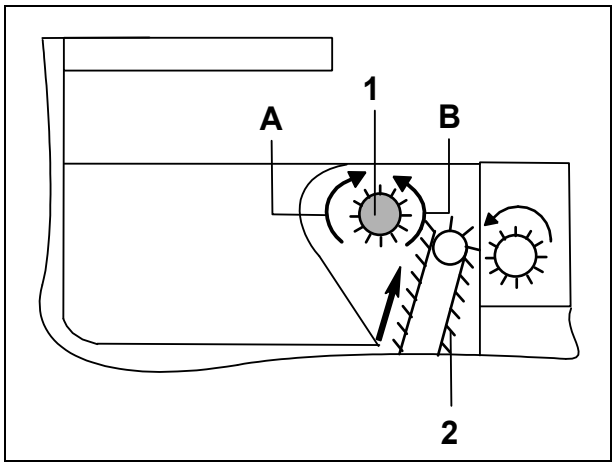
– **Prerequisite:** If the desired production is not attained by means of the speed of the spiked lattice, the rate of opening of the material will have to be reduced.
Production can be adjusted in steps by gradually altering the speed of the spiked lattice.

Upright lattice speed ranges

Minimum speed for spiked lattice	Level 20
Maximum speed for spiked lattice	Level 100

⟹ R/S module: Changing the speed of the spiked lattice will also cause the speed of the feed rollers in the module to change. The production rate of the module increases.

Direction of rotation of the opening roller



– As s standard setting, the opening roller (1) “goes against the flow” (A), i.e. runs in the direction opposite to that in which he spiked lattice (2) runs.

– If production is insufficient, despite the production level and opening roller being set correctly, then attempts can be made with the opening roller “going with the flow” (B).

Note: The opening roller (1) will then run in the same direction (B) as the spiked lattice (2).

⟹ For this setting, the material will no longer be opened immediately.

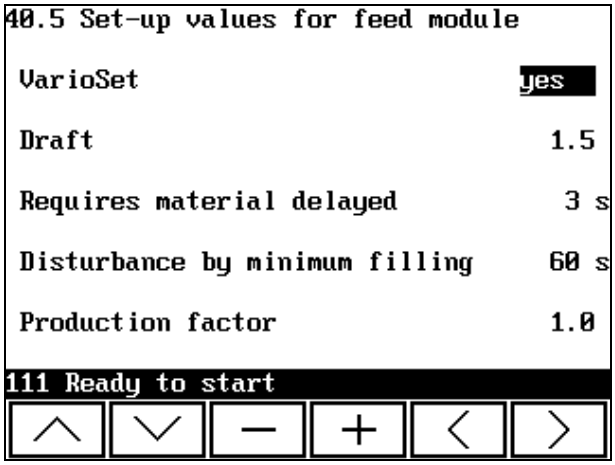
Changing the degree of opening

– By gradually changing the degree of opening, the production rate can be altered in steps, while maintaining the speed of the spiked lattice.

Degree of opening

Lowest degree of opening:	Level 0.1: Maximum distance between the opening roller and the spiked lattice.
Highest degree of opening	Level 1.0: Minimum distance between the opening roller and the spiked lattice.

Adjusting the production of the module to the production of the blender



– **Prerequisite:** Along with the settings of data screen 10.1, the production rate of the module can be increased or reduced.
Select the data screen and change the factor value on the fifth line.
Note: The feed chute must always be filled as much as possible.

Changing the production of the module

Value below level 1.0	Reduced production of the module
Value above level 1.0	Increased production of the module
Level 1.0	Standard setting

7.4.3 V-belt

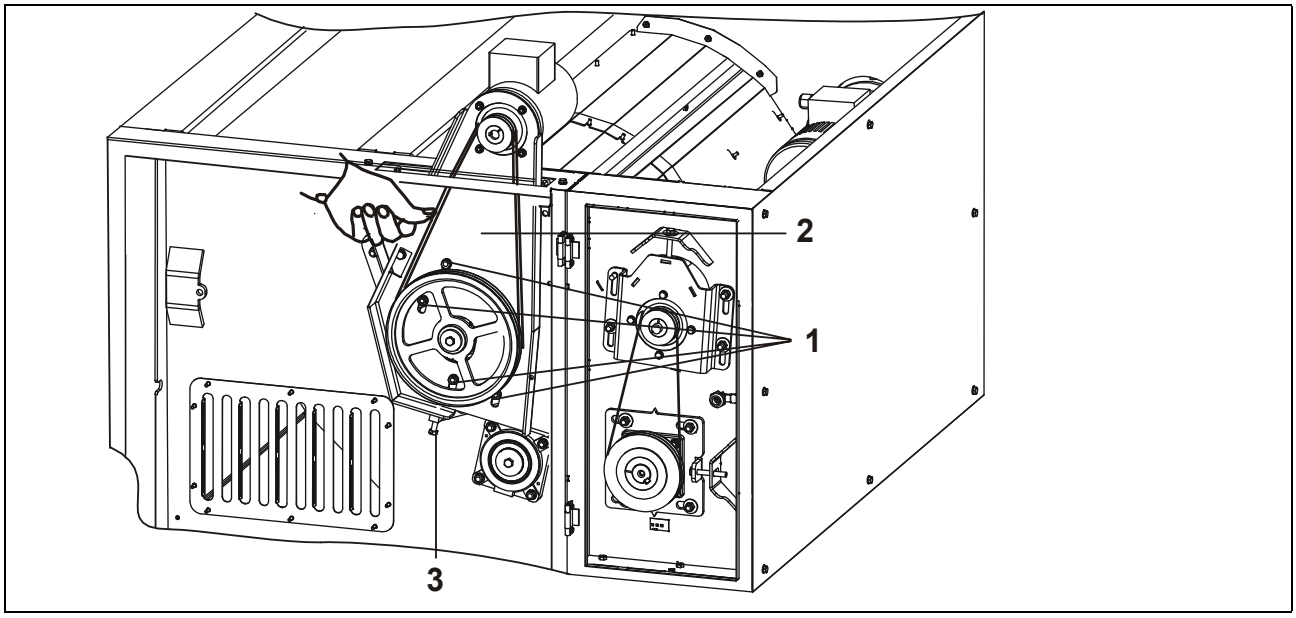
7.4.3.1 Tighten the V-belt

Settings, Page 3/3

WARNING
Set the main switch to the “off” position and secure it with a lock.

The V-belts of the opening rollers must be tightened so that they can be pushed in at normal pressure.

Sequence of steps



– Loosen the four bolts (1).

– Use bolt (3) to move the plate (2), which will tighten the belt.

The belt can be pushed in	Approx. 5 mm

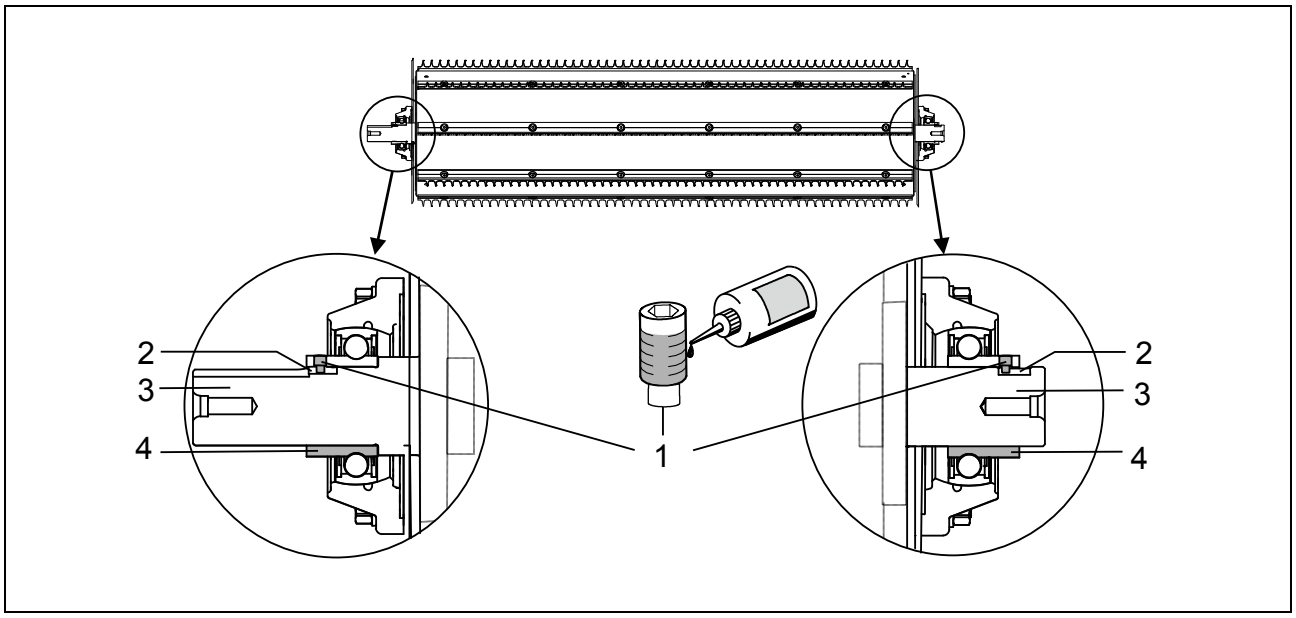
7.5 Material discharge

7.5.1 Take-off roller

7.5.1.1 Positioning the ball bearing races for the take-off roller

WARNING
Set the main switch to the “off” position and secure it with a lock.

Sequence of steps



– At the installed take-off roller, precisely align the screw holes of the ball bearing races (4) with the grooves (2) of the bearing journals (3).

– Coat the screws (1) with Loctite 243.

  Note: Loctite 243 is a non-setting product for securing screws.

– Insert the screws (1) fully and then loosen them by half a turn.

  Note: The screws (1) are not used for fastening purposes, but to ensure the movement of the bearing races (4).

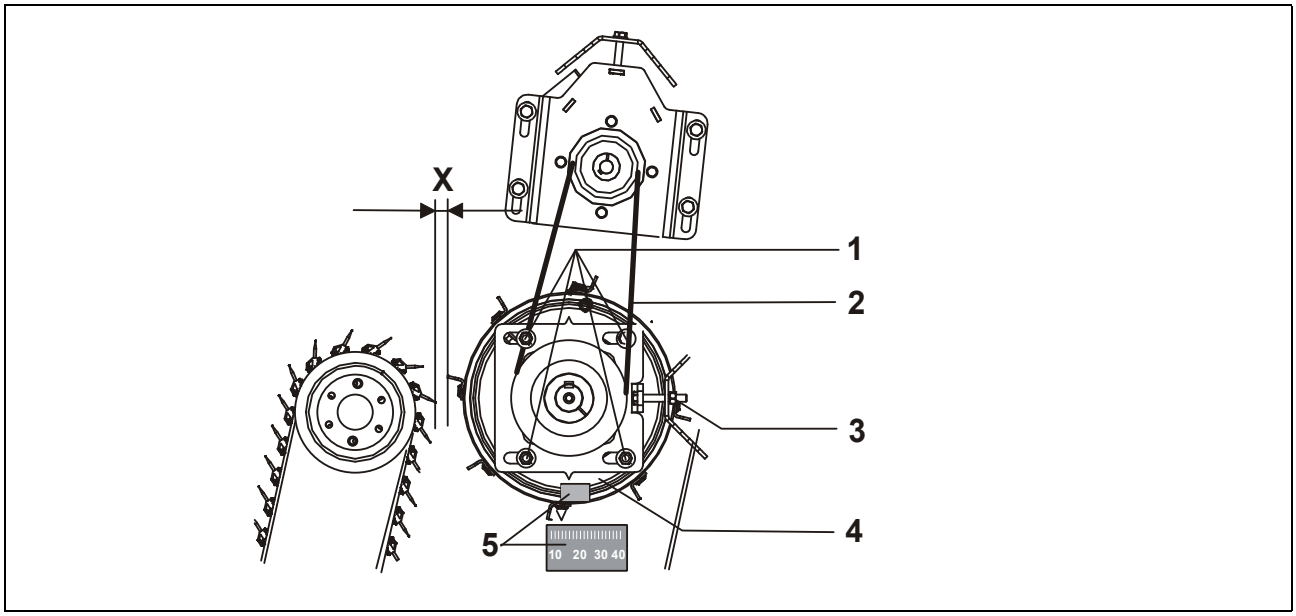
7.5.1.2 Distance of the Take-off Roller to the Spike Lattice

Settings, Page 3/3

WARNING
Set the main switch to the “off” position and secure it with a lock.

Setting aim: Removing cotton from the spiked lattice

Sequence of steps



– Loosen screws (1).

– Use the nuts (3) to set take-off roller (4) to the corresponding position on the scale (5).
Note: The distance from the take-off roller (4) to the spiked lattice must be identical on the left and the right side of the machine.

Clearance “X”	10 - 40.0 mm

– After adjustment of the take-off roller (4) adjust the tension of the V-belt (2).
Tighten the V-belt, Page 6/49

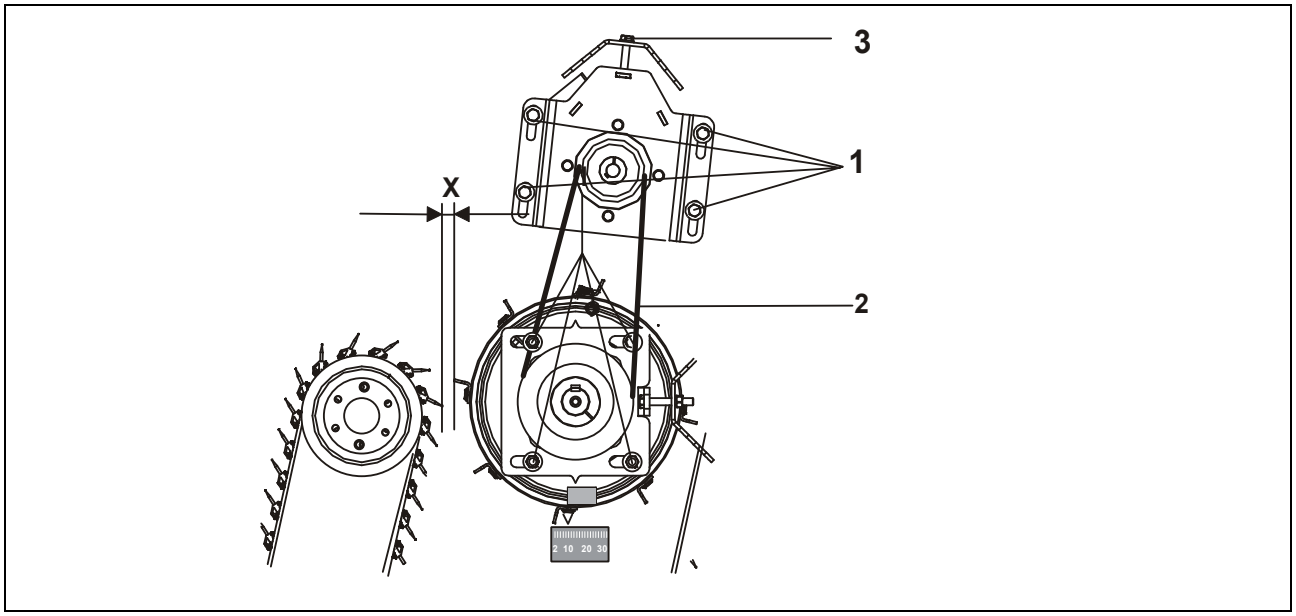
7.5.2 V-belt

7.5.2.1 Tighten the V-belt

WARNING
Set the main switch to the “off” position and secure it with a lock.

The V-belts of the take-off rollers must be tightened, so that they can be pushed in at normal pressure.

Sequence of steps



– Loosen screws (1).

– Use the screw (3) to tighten the belt (2).

The belt can be pushed in	Approx. 5 mm

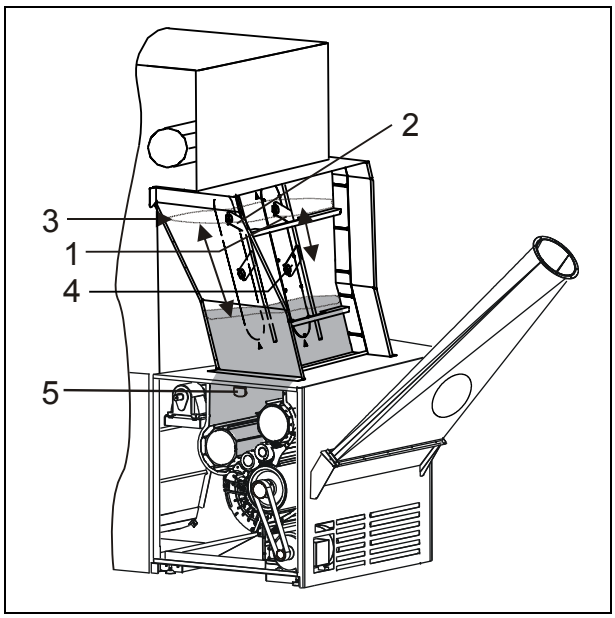
7.6 Chute feed

7.6.1 Light barriers

Feed chute, Page 3/6

The material height in the feed chute is dependent on the position of the top light barrier (1). The bottom light barrier (5) prevents the feed chute from becoming empty.

Top light barrier



– Position the light barrier (1) in such a way that the feed chute (3) can never overflow, but on the other hand a maximum material height is attained.

  Note: Precisely align the receiver (2) with the centre of the light barrier (1).

  ⟹ If the top light barrier (1) at the feed chute becomes unobstructed, the material supply device (spiked lattice) is deactivated.

– Set the amount of time until material is requested again.

  ☞ 40.5, Page 2/68

Middle light barrier

– Position the light barrier (4) around the centre of the feed chute (basic setting).

  Note: The speed of the spiked lattice is higher when the light barrier (4) is free of obstruction.

– If the filling of the feed chute is continually inefficient, place the light barrier (4) in a higher position.

Bottom light barrier

– **Prerequisite:** The light barrier (5) detects when the minimum fill level is reached.

  Set the amount of time between the detection of the reaching of the minimum fill level and the moment when a fault message is issued.

  ☞ 40.5, Page 2/68

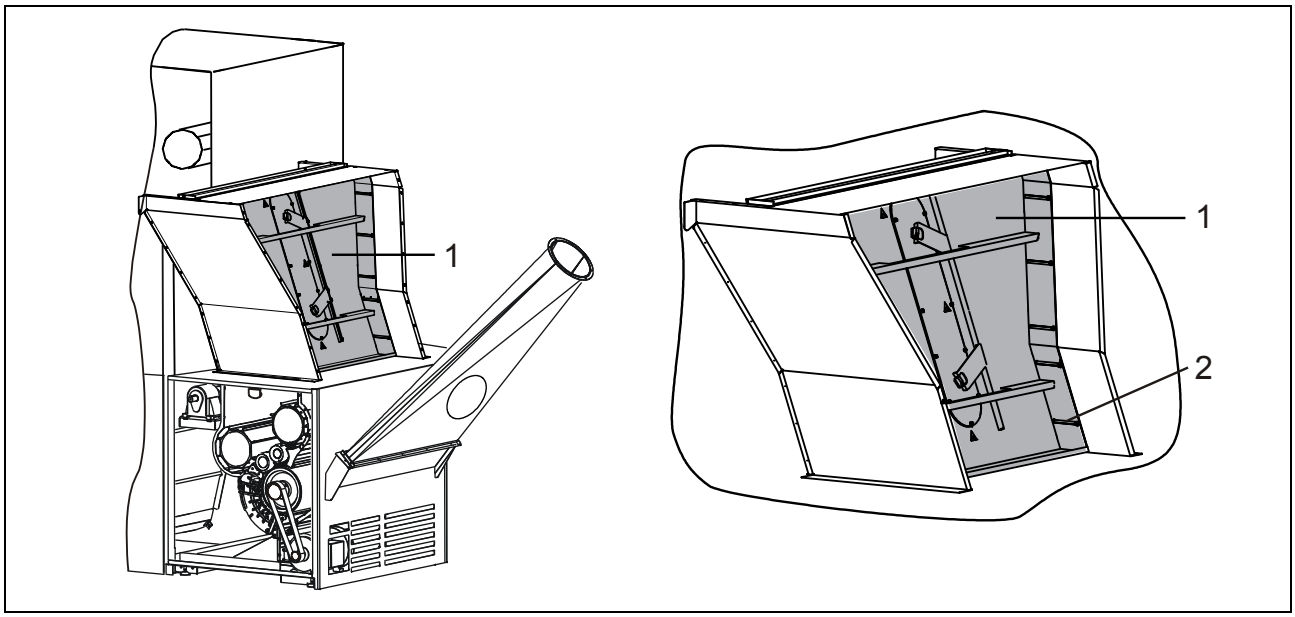
7.6.2 Setting the feed chute walls

Feed chute, Page 3/6

WARNING
Set the main switch to the “off” position and secure it with a lock.

If the material feed for the module is too compact, the feed chute wall has to be “closed” more.
The position of the feed chute wall (1) affects the volume of material feed in the feed chute.

Sequence of steps



– **Prerequisite:** Feed material is too light or too heavy.
  Loosen all screws (2) on both sides.

– Re-position the feed chute wall (1) according to the material feed required, ensuring that it always remains parallel with its original position while being moved.

7.7 R/S module

7.7.1 Differential pressure switch

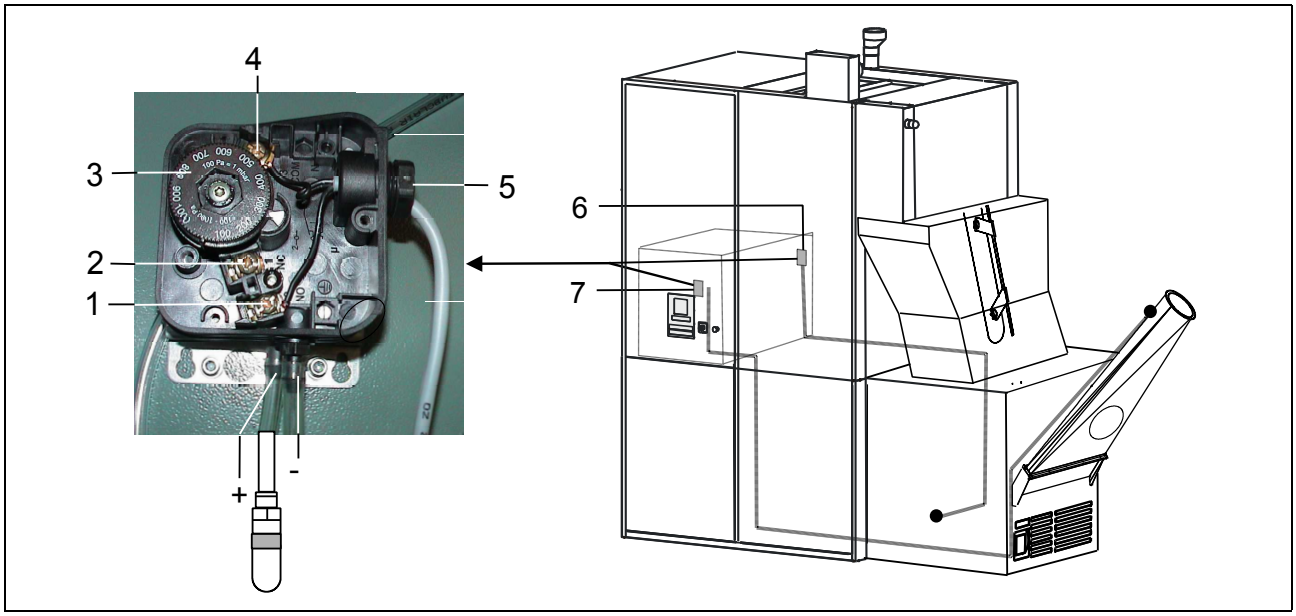
R/S module, Page 3/7

DANGER
If the vacuum is below the specified minimum value, the suction points will not be cleared of waste correctly.
The minimum vacuum setting, for which the machine is switched off, must not be lower than this value.
Blocked suction points affect the extraction of waste and can lead to machine damage.

The differential pressure switches (6) and (7) monitor the vacuum during waste extraction or material delivery.

Setting aim: The minimum vacuum setting will be monitored. The machine switches off, if the measured vacuum drops below the value set at the dial.

Sequence of steps



+	*No connection made here*
-	*Connection point for suction unit*
1 NO	*Opens if the vacuum drops*
2 NC	*No connection made here*
3	*Dial*
4 Com	*Input voltage*
5	*Threaded connection point*
6	*Differential pressure switch for monitoring the vacuum for waste extraction*
7	*Differential pressure switch for monitoring the vacuum at the material delivery section of the machine*

– Use the dial (3) to set the required value.

Monitoring of minimum vacuum settings

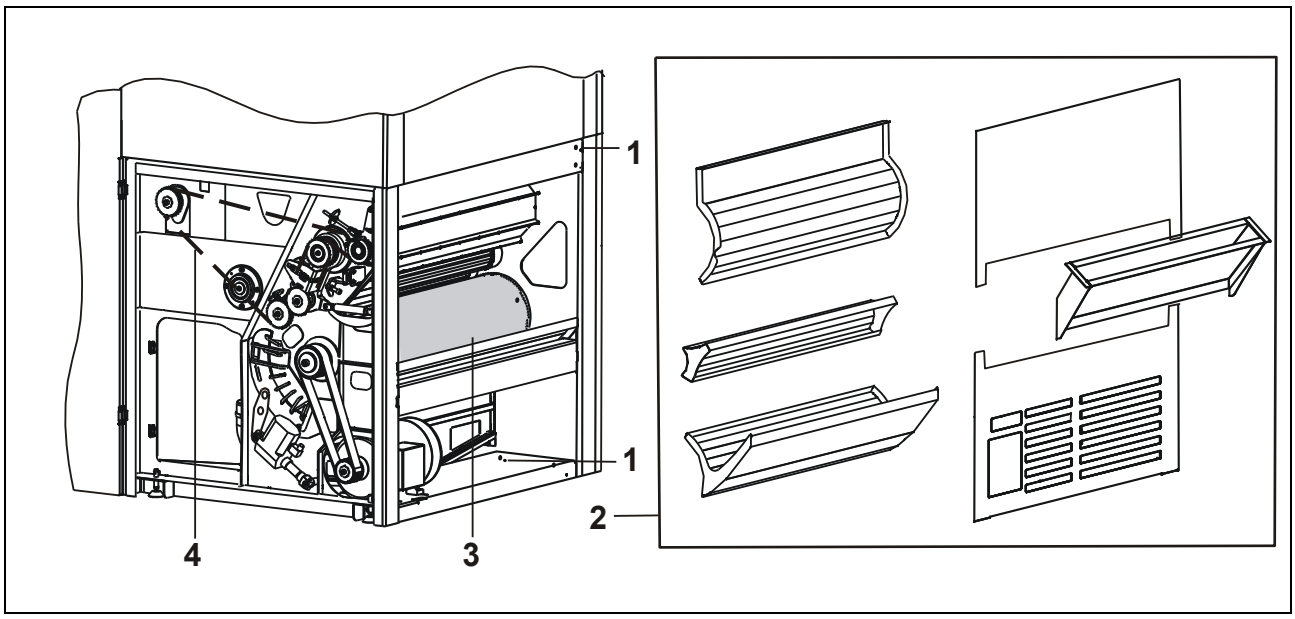
Waste extraction: Minimum static vacuum	min. - 600 Pa
Material delivery: Minimum static vacuum	min. - 150 Pa

7.7.2 Compression rollers

7.7.2.1 Removing the compression roller

WARNING
Set the main switch to the “off” position and secure it with a lock.

Preparatory work



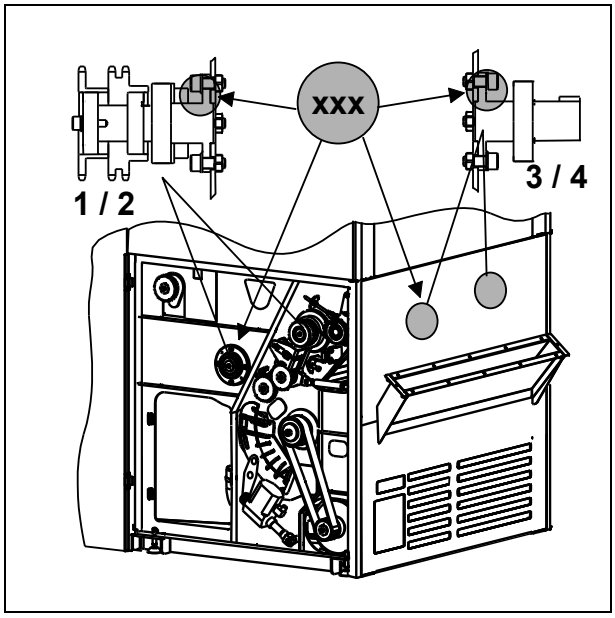
– Loosen the screws (1) of the cross-members on the right-hand side of the machine.

– Remove all parts (2).
Note: Cover the opening roller (3) to avoid injury.

– Remove the chains (4) on both sides.

Marking the numbers of the bearing journals for the compression rollers

Note: It is essential that the marked bearing journals are refitted at the points where they were removed.

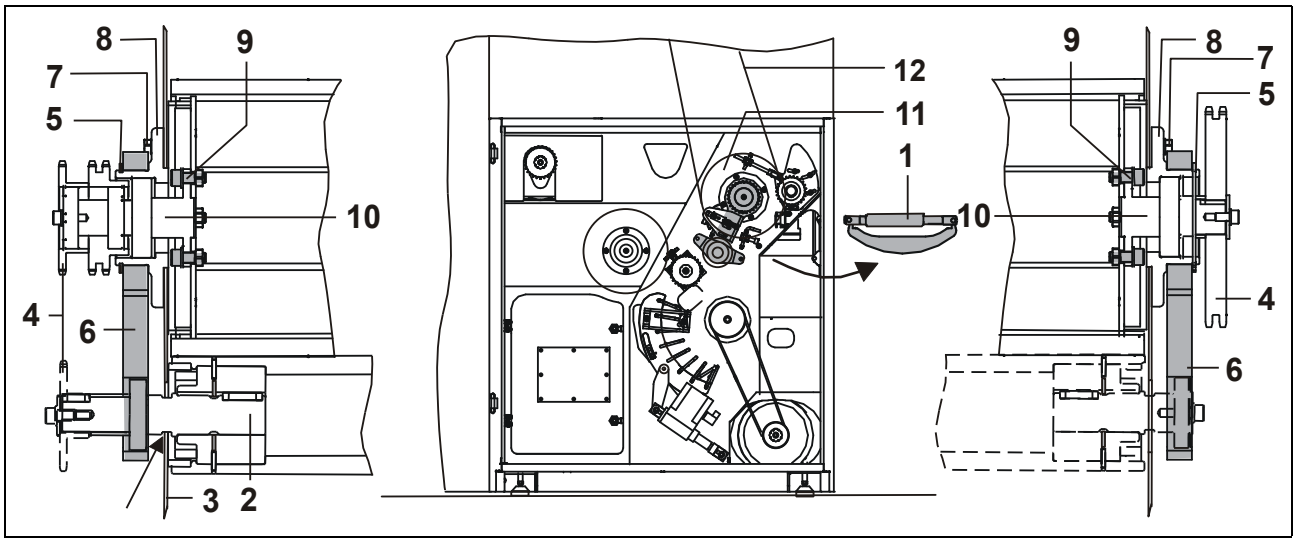


– The bearing journals (1 / 2) or (3 / 4) are not the same and are marked with different numbers (xxx).

– Mark the number of a bearing journal (xxx) at the point where it is removed or else note it separately.

Note: There must be no possibility of confusion regarding the removal position and the number.

Removing the front compression roller (system with bearing journals)



– Remove the gas pressure springs (1).
☞ Removing feed roller, Page 6/59

– The bearing journals (2) of the feed roller must fit through the holes on the side sections of the machine (3) and be horizontally positioned.

– Secure the compression roller (11) with ropes or belts (12).

– Remove the sprockets (4) and the Seeger circlip rings (5).

– Pull off the bearing levers (6).

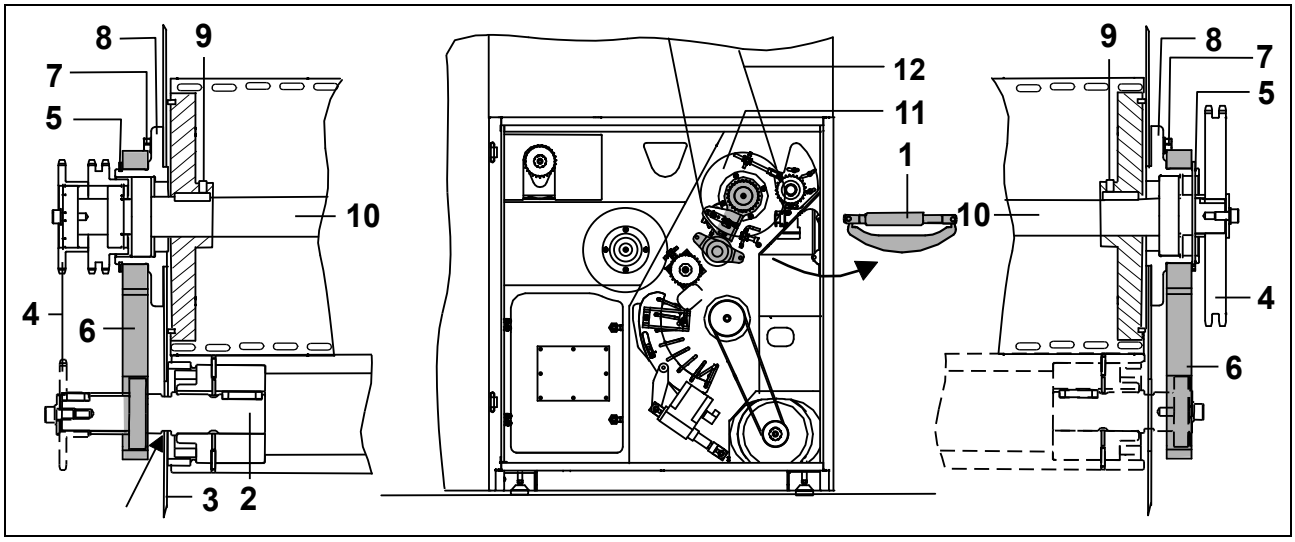
– Remove all nuts (7) from the bearing plates (8).

– Remove the bearing plates (8).

– **Prerequisite:** Prior to removing the bearing journals (10) make a note of the number and position where the journal was removed, in each case.
  Remove the screws (9) and the bearing journals (10).

– Remove the compression roller (11) by moving it forwards and out of the machine.

Removing the front compression roller (system with shaft)



– Remove the gas pressure springs (1).
  ☞ Removing feed roller, Page 6/59

– The bearing journals (2) of the feed roller must fit through the holes on the side sections of the machine (3) and be horizontally positioned.

– Secure the compression roller (11) with ropes or belts (12).

– Remove the sprockets (4) and the Seeger circlip rings (5).

– Pull off the bearing levers (6).

– Remove all nuts (7) from the bearing plates (8).

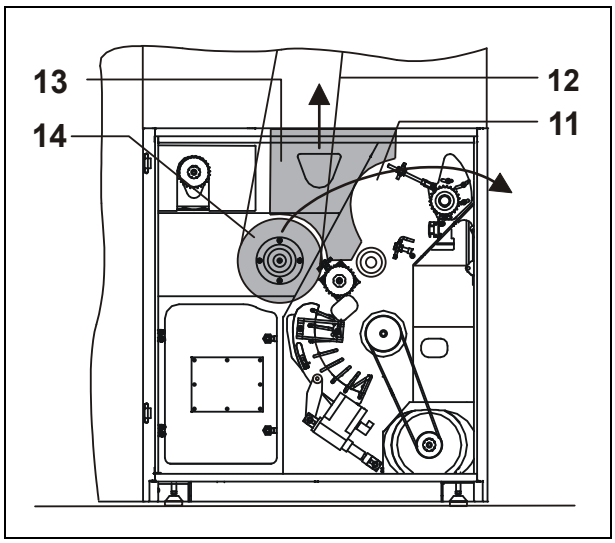
– Remove the bearing plates (8).

– Loosen the screws (9).
  Note: Do not completely loosen the screws.

– Pull out the shaft (10).

– Remove the compression roller (11) by moving it forwards and out of the machine.

Removing the rear compression roller

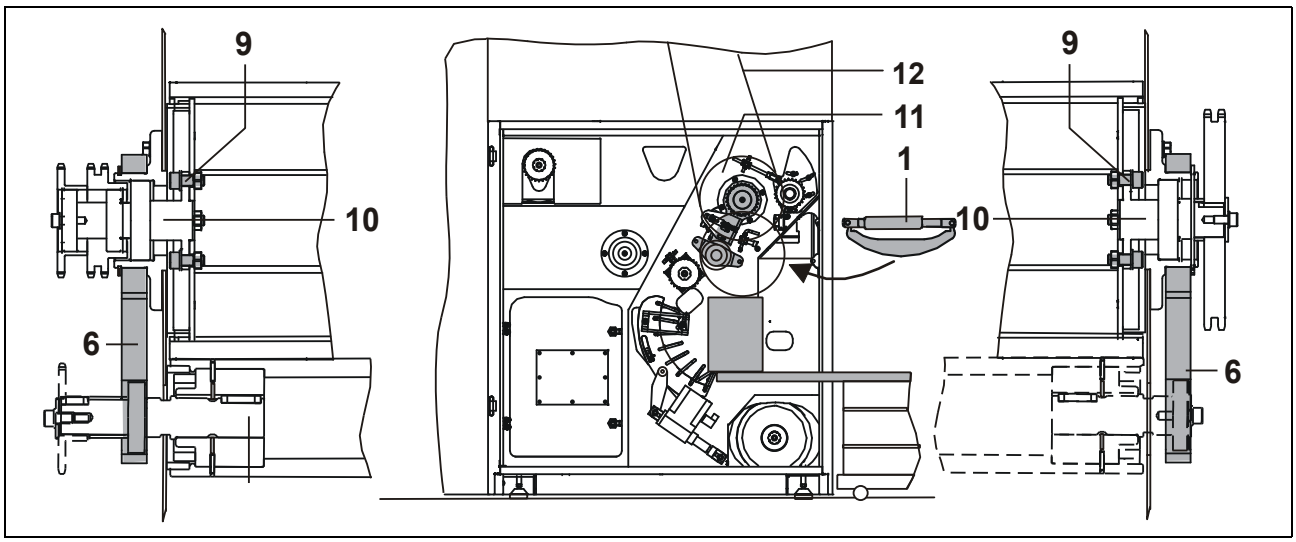


– Secure the compression roller (14) with ropes or belts (12).
– The front compression roller (11) must first be removed before the rear compression roller (14) can be removed.
– In addition, the material deflectors (13) on the inner side of the machine must be moved upwards and out of the machine.
– The usual procedure is exactly the same as that applied when removing the front compression roller (11).
– The compression roller (14) must likewise be moved forwards and out of the machine.

7.7.2.2 Installing the compression roller

WARNING
Set the main switch to the “off” position and secure it with a lock.

Installing the front compression roller (system with bearing journals)



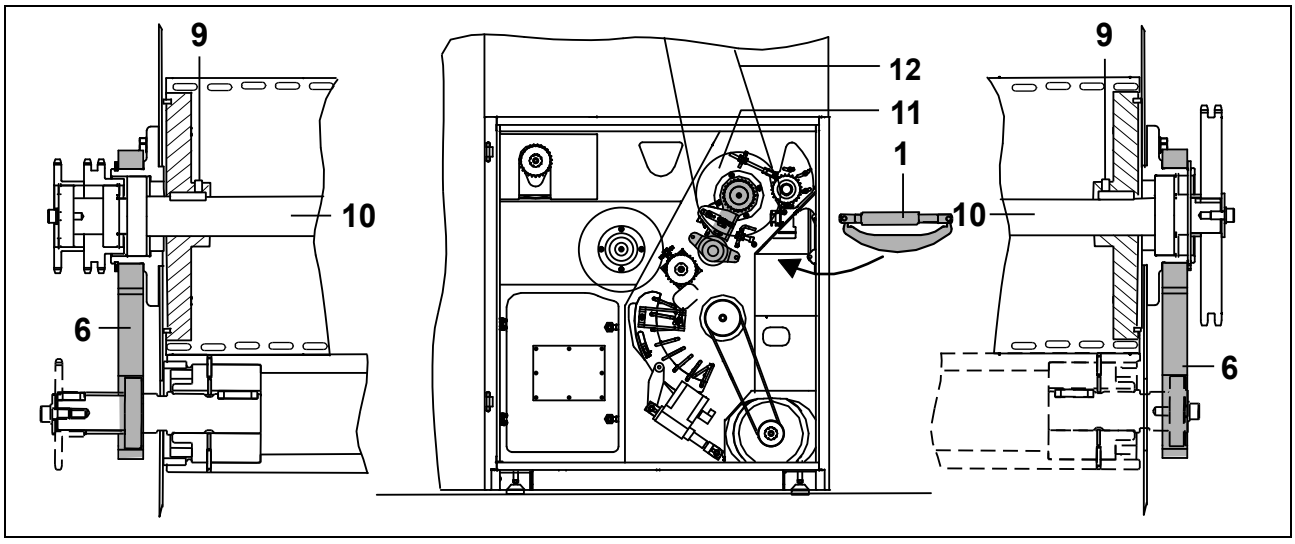
– Move the compression roller (11) to the position for installation and secure with ropes or belts (12).

CAUTION
Machine damage can occur if marked bearing journals are not fitted at the correct positions.

– Centre the bearing journals (10) in the bore holes and tighten firmly using the screws (9).
Note: Check the bearing journals (10) for correct positioning before tightening the screws (9) firmly.

– **Prerequisite:** Coat the bore hole surfaces for the bearing levers with assembly paste.
  Mount the bearing levers (6) and all other parts.
– Use the assembly tool to install the gas pressure springs (1).
– Install the opening roller.
  ☞ Installing opening roller, Page 6/67
– Add the chain and tighten it according to specifications.
  ☞ Tighten chain, Page 6/63

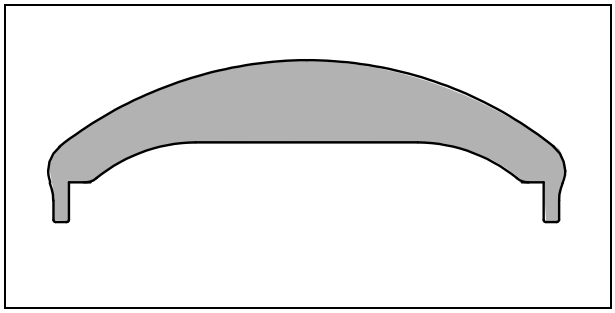
Removing the front compression roller (system with shaft)



– Move the compression roller (11) to the position for installation and secure with ropes or belts (12).
– Centre the shaft (10) in the bore hole and tighten firmly using the screws (9).
  Note: Check the bearing journals (10) for correct positioning before tightening the screws (9) firmly.
– **Prerequisite:** Prior to installation, lightly coat the shaft with assembly paste.
  Insert the shaft (10).
– Fit the remaining parts.
– Tighten the screws (9) firmly.
– **Prerequisite:** Coat the bore hole surfaces for the bearing levers with assembly paste.
  Mount the bearing levers (6) and all other parts.
– Use the assembly tool to install the gas pressure springs (1).
– Install the opening roller.
  ☞ Installing opening roller, Page 6/67
– Add the chain and tighten it according to specifications.
  ☞ Tighten chain, Page 6/63

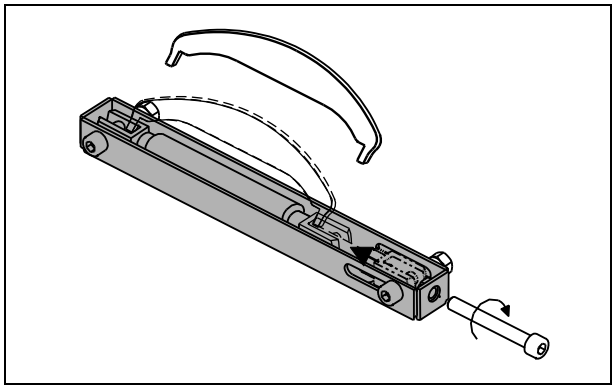
7.7.3 Feed rollers

7.7.3.1 Tools



Assembly tool for gas pressure spring

Used to install and remove gas pressure springs of the feed rollers.



Preparing the gas pressure spring prior to application of assembly tool

Compress the gas pressure spring prior to fitting the tool

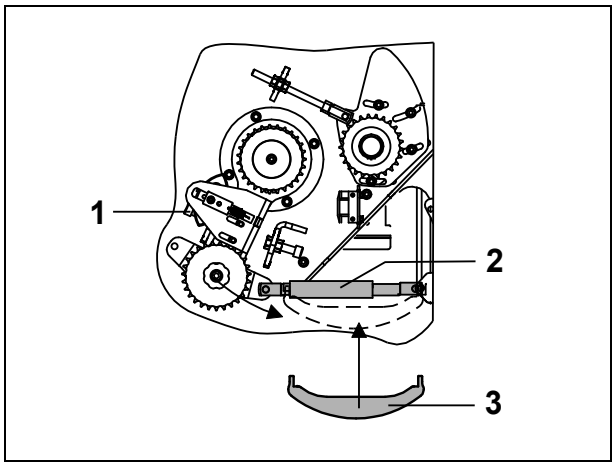
7.7.3.2 Removing feed roller

WARNING
Set the main switch to the “off” position and secure it with a lock.

Preparatory work

– Remove the opening roller.
☞ Removing the opening roller, Page 6/65

Removing gas pressure springs



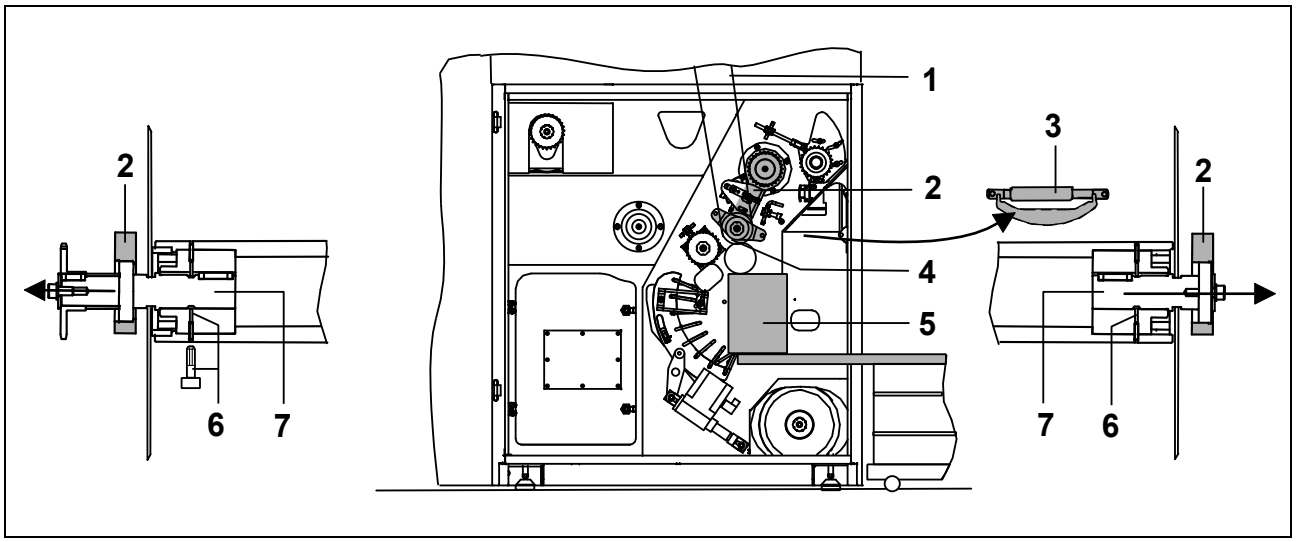
– Use the adjusting screws (1) to press together the gas pressure springs (2) on both sides until the clamp (3) can be applied.
☞ Assembly tool for gas pressure spring, Page 6/58

– Release the pressure on the adjusting screws (1).

– Subsequently remove the bolts and the gas pressure springs (2).

Removing the feed roller

Note: Carry out all steps on both sides.

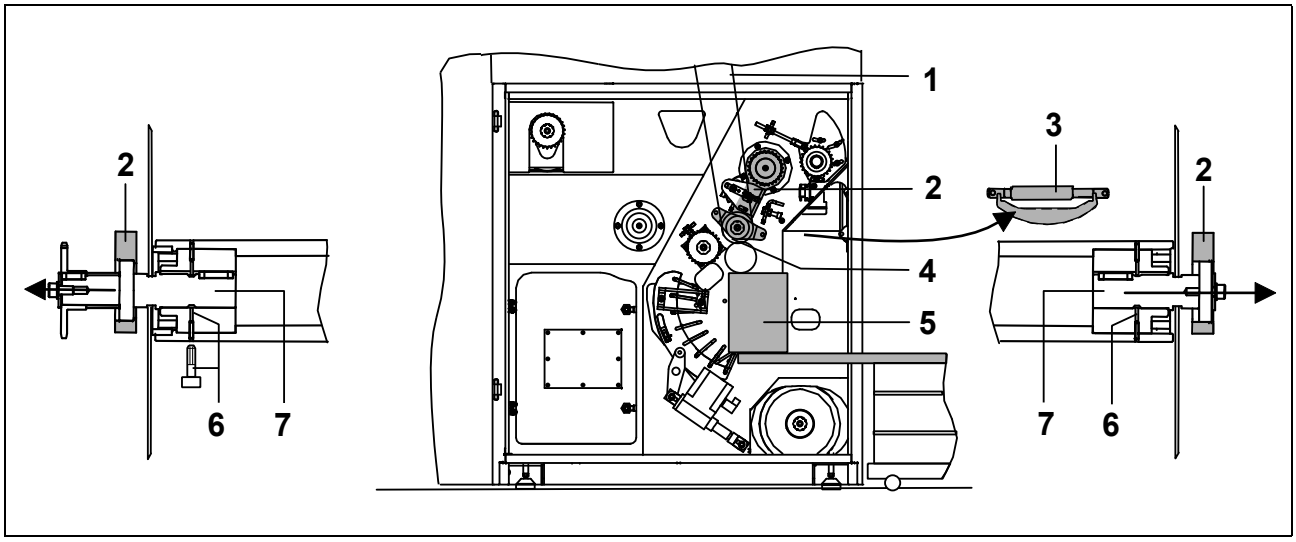


– The gas pressure springs (3) have been removed.

– Secure the feed roller (4) with ropes or belts (1).

– Remove as many parts as necessary until the bearing levers (2) can be removed.

– Loosen all screws (6).



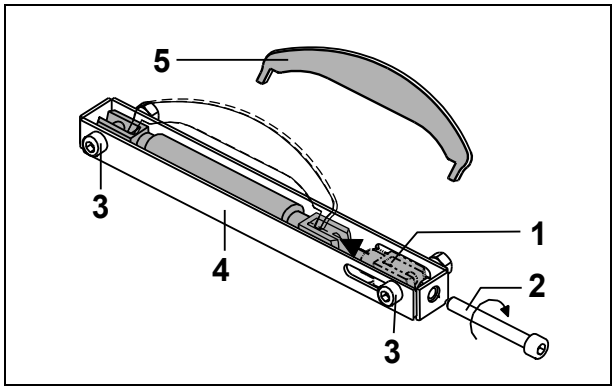
– **Prerequisite:** Use the ropes or belts (1) to lift the feed roller to the centre of the opening in the side section of the machine.
  Pull off the bearing journals (7).

– Lower the feed roller (4) on to the support (5).

7.7.3.3 Installing the feed roller

WARNING
Set the main switch to the “off” position and secure it with a lock.

Preparing the gas pressure spring for the installation



– Place the non-compressed gas pressure spring (1) in the device (4).
☞ Preparing the gas pressure spring prior to application of assembly tool, Page 6/58

– The bolts (3) and nuts are used to secure the spring.

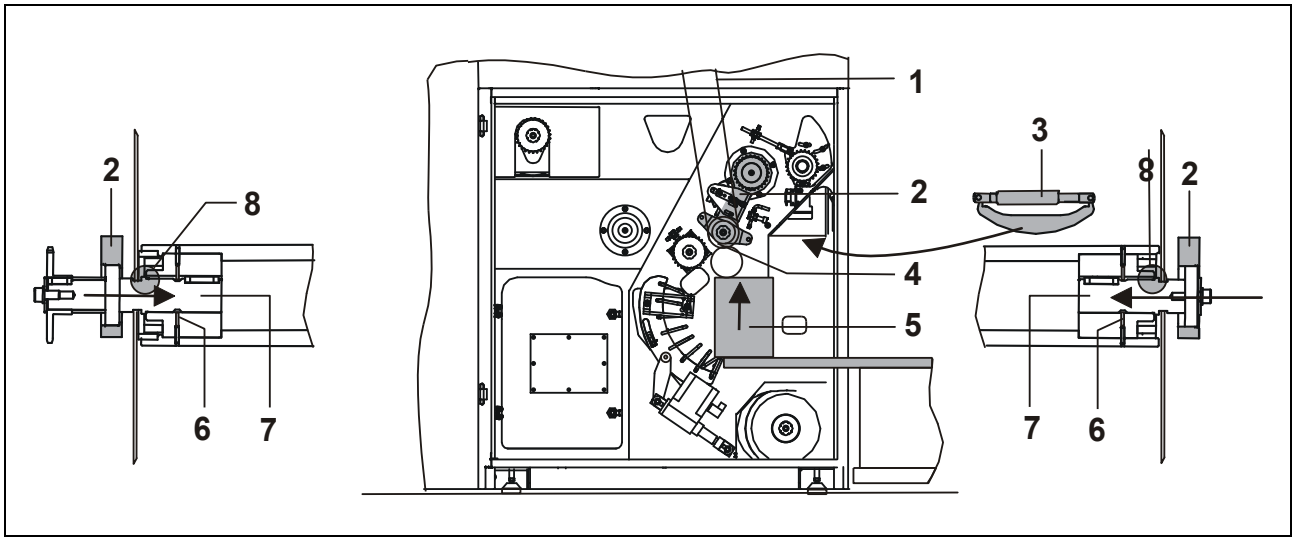
– Insert the bolt (2) so that the gas pressure spring (1) becomes compressed.

– As soon as the gas pressure spring (1) has been fully compressed, insert the tool (5).
Note: The gas pressure spring must be positioned against the stops.

– Carefully loosen the clamping bolt (2).
Note: Ensure that the tool is correctly positioned.

– Remove the bolts (3).

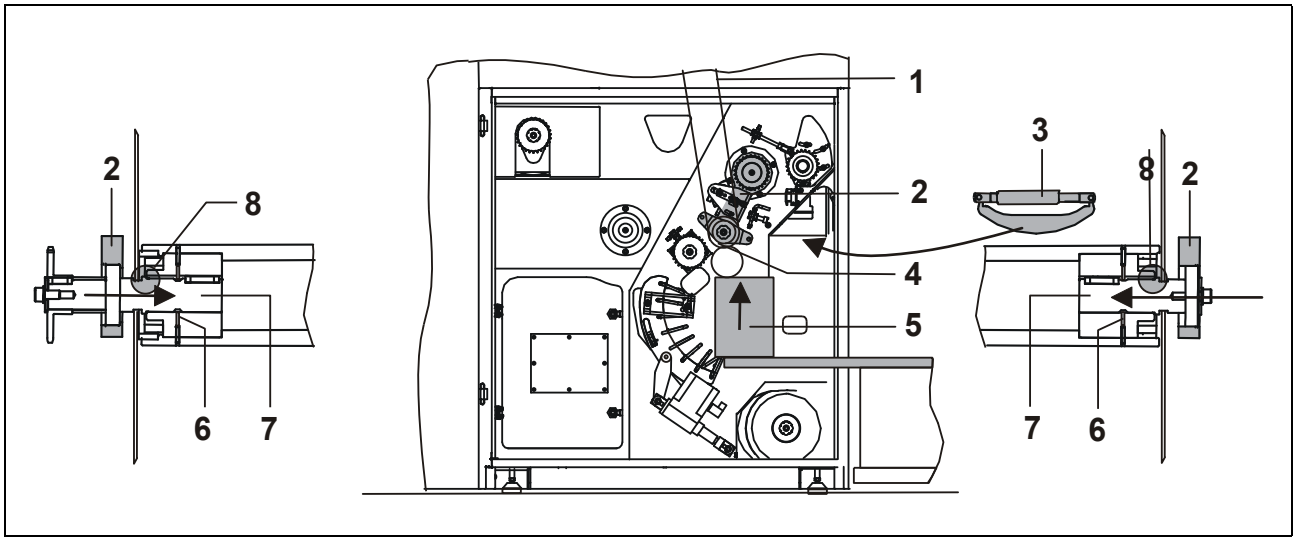
Procedure for installing feed rollers



– Move the feed roller (4) to the position for installation and secure it with ropes (1).

– **Prerequisite:** Prior to installation, coat the bearing journals (7) with assembly paste.
Insert the bearing journals (7) into the feed roller (4).
Note: The bearing journals must be inserted into the feed roller (8) up to the limit stop.

– Mount the bearing levers (2) and all other parts.



– Use the assembly tool to install the gas pressure springs (3).

– Adjust the feed roller (4) laterally, so that it is evenly aligned, and subsequently tighten the screws (6) firmly.

  Note: Tighten all four screws (6) on the circumference firmly.

– Install the opening roller.

  ☞ Installing opening roller, Page 6/67

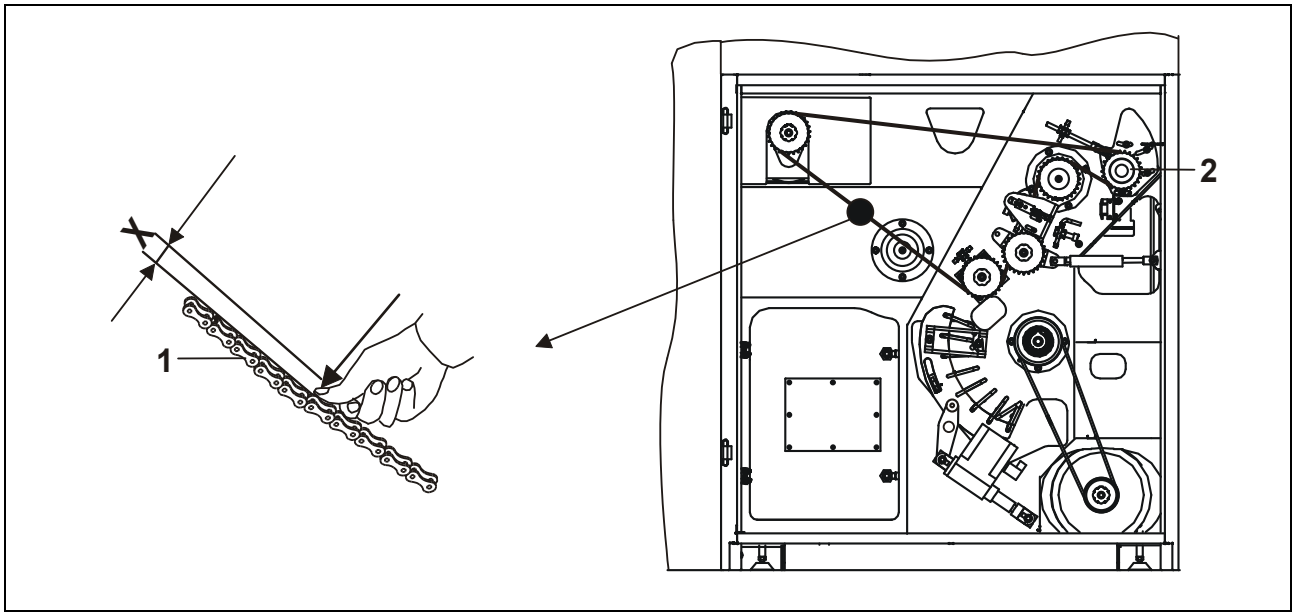
– Add the chain and tighten it according to specifications.

  ☞ Tighten chain, Page 6/63

7.7.3.4 Tighten chain

R/S module, Page 3/7

WARNING
Set the main switch to the “off” position and secure it with a lock.



Sequence of steps

– When checking the chain (1), it must deflect by the specified amount («X»).

Note: If the deflection distance is incorrect, use a chain tensioner (2) to adjust the chain tension.

Tightening chain

Dimension X	5.0 - 10.0 mm

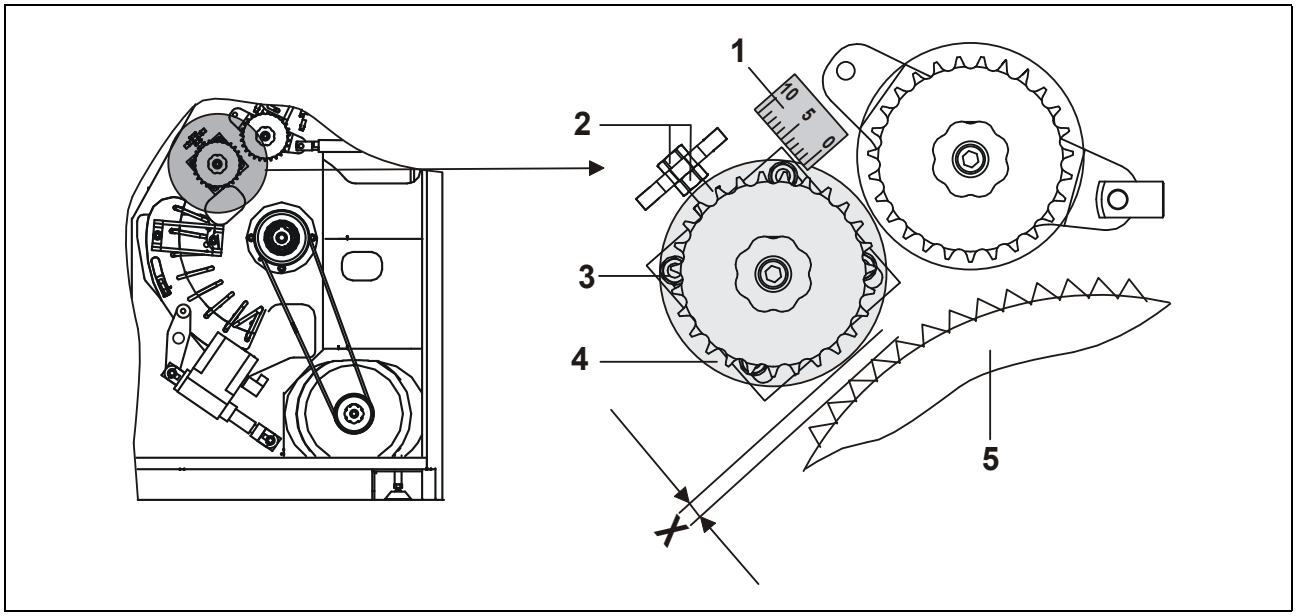
7.7.3.5 Adjusting the distance between the feed and opening rollers

R/S module, Page 3/7

WARNING
Set the main switch to the “off” position and secure it with a lock.

To optimise the running properties, the feed roller (3) can be adapted to an assortment.

Sequence of steps



– Loosen the nuts (3) on both sides.

– **Prerequisite:** Select the distance (X) between the feed roller and opening roller.
Use the nuts (2) to set the feed roller (4) to the required value on the scale (1).
Note: The settings made on both sides must be equal, in order that the feed roller (4) is as parallel as possible to the opening roller (5).
Distance between feed roller and opening roller

Distance X: 3.0 mm	Minimum distance. X must not fall below minimum distance value.
Distance “X”: 4.0 mm	Standard setting for all materials

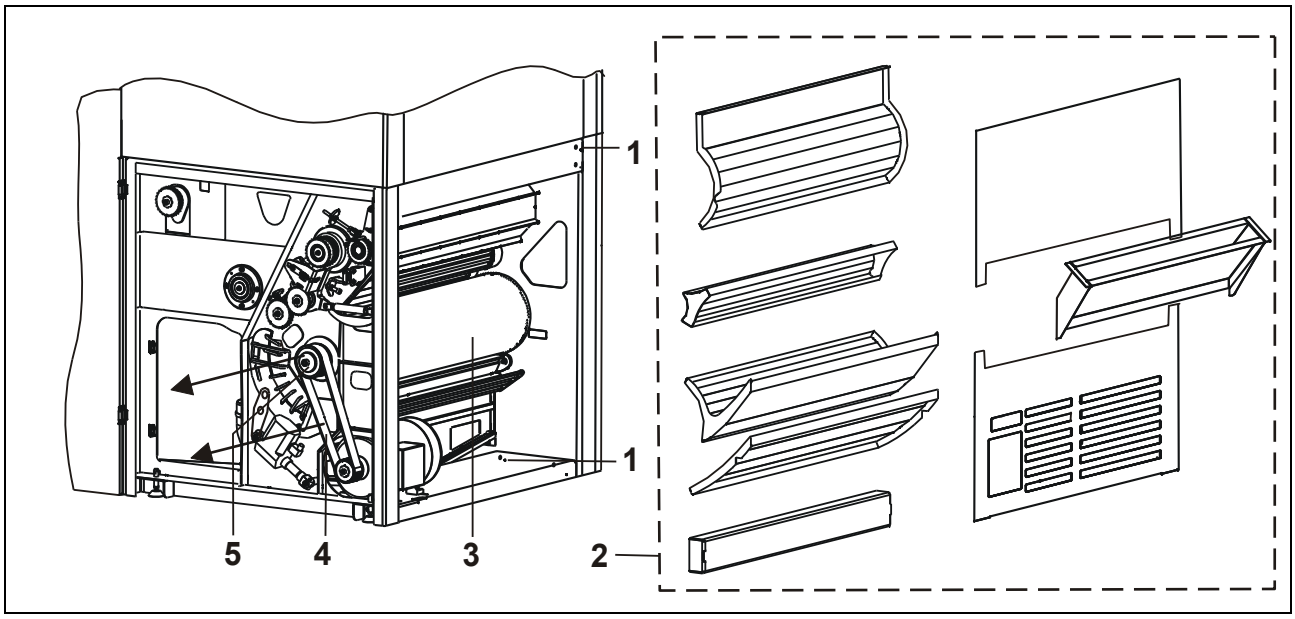
– The optimal setting is determined by trial and error.

7.7.4 Opening roller

7.7.4.1 Removing the opening roller

WARNING
Set the main switch to the “off” position and secure it with a lock.

Preparations



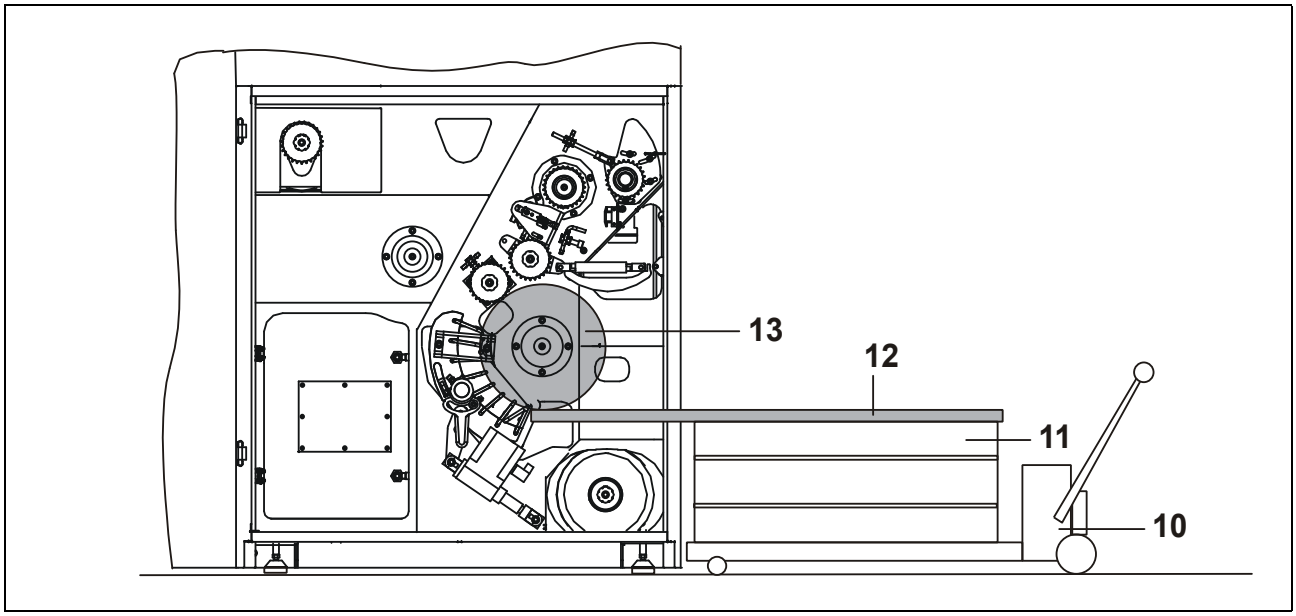
– Loosen the bolts (1) of the cross-members on the right-hand side of the machine.

– Remove all parts (2) until the opening roller (3) is accessible.

– Slacken and remove the belt (4).

– Remove the belt pulley (5).

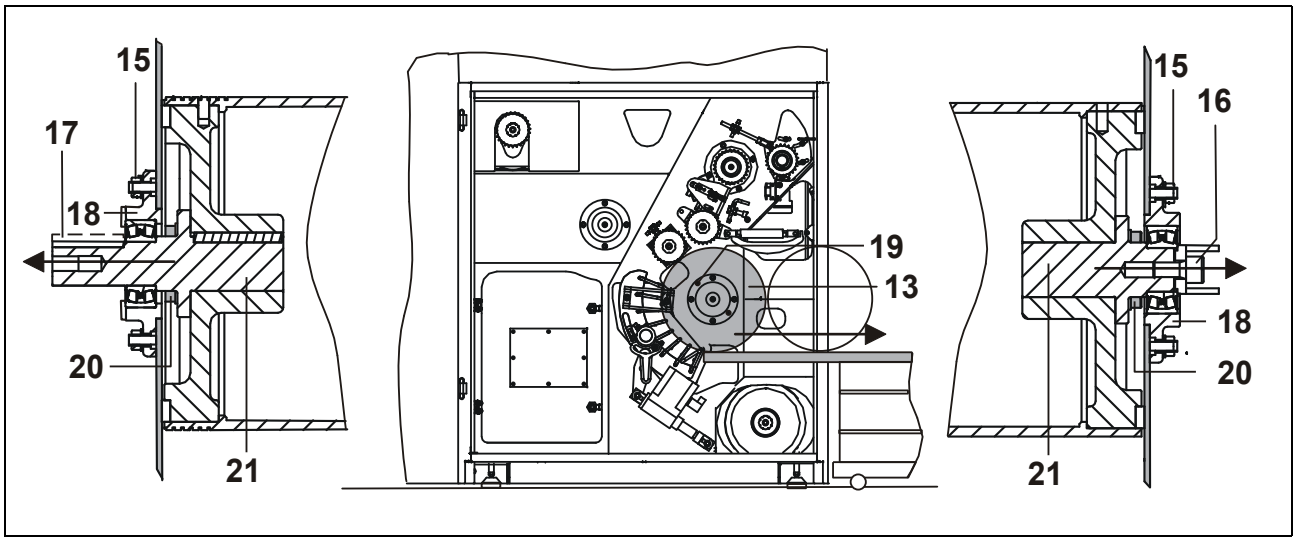
Preparing auxiliary equipment for removal



– Prepare auxiliary equipment for removal, featuring pallets (11) and boards (12), on a trolley jack (10).
  Note: Move the structure towards the underside of the opening roller (13).

– Carefully lift the auxiliary equipment using the trolley jack until the boards (12) lightly abut the opening roller (13).
  Note: Avoid applying pressure to the opening roller (13).

Removing opening roller



– Remove all nuts (15).

– Remove the bolt (16).

– Remove the block (17).

– Screwing the screws in the threaded holes (19) forces off the bearing plates (18).

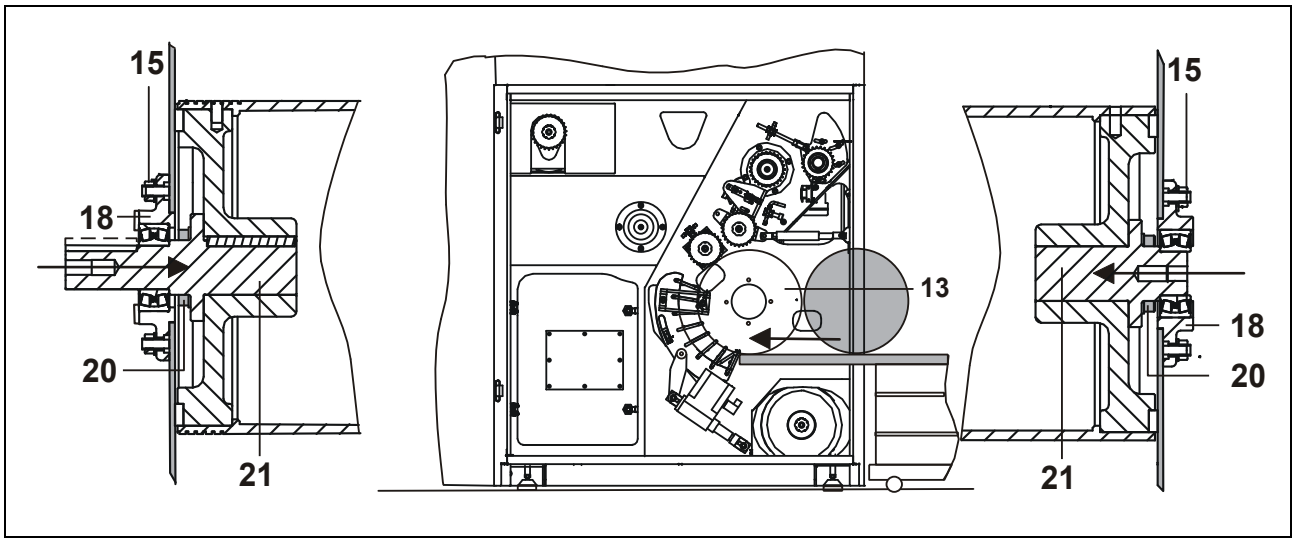
– Remove all screws (20).

– Remove the two bearing journals (21) from the opening roller.

7.7.4.2 Installing opening roller

WARNING
Set the main switch to the “off” position and secure it with a lock.

Sequence of steps



– Use the auxiliary equipment for removal to move the opening roller (13) to the installation position.

– Roll the opening roller (13) into the machine.
Note: Align the opening roller (13) in such a way that the bearing journals (21) can be inserted into the bore holes of the opening roller.

– **Prerequisite:** Prior to installation, coat the bearing journals (21) with an assembly paste.
Insert the bearing journals (21) into the bore holes of the opening roller.

– Insert the screws (20) and tighten firmly.

– Install the bearing plates (18).

– Tighten the nuts(15) firmly.

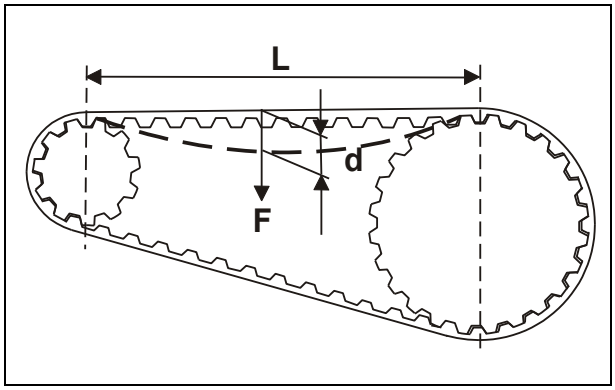
– Lower the auxiliary equipment and rotate the opening roller (13).

– Install all remaining parts together with the drive pulley, and then fit the toothed belt and tighten it according to specifications.
☞ Controlling and tightening toothed belts, Page 6/68

7.7.4.3 Controlling and tightening toothed belts

R/S module, Page 3/7

WARNING
Set the main switch to the “off” position and secure it with a lock.

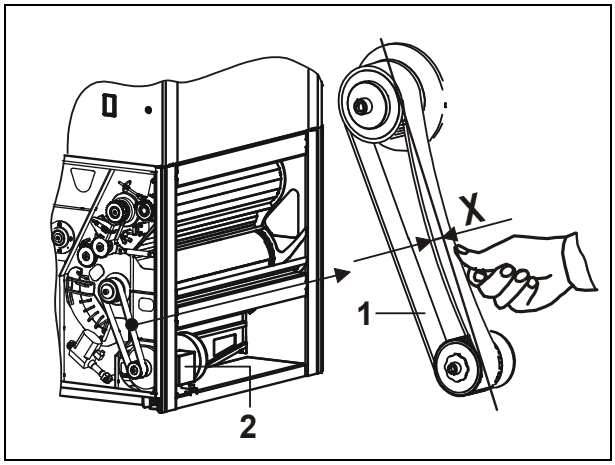


Setting aim: Appropriate preliminary tensioning and maintenance of the belts are required to ensure an optimal service life and power transfer. If the belts are too tight, bearings and belts may sustain damage. If the belts are too slack, the teeth in the belt may skip leading to faults and damage. In addition, care must be taken to ensure the cleanliness of belts and belt pulleys as well as to remove any dirt accumulation at the tooth base.

Example of deflection for a toothed belt with a 640 mm distance between axes (L)

Deflection (d) as a percentage of the distance between axes (L)	1.50 %
Deflection (d) at approx. 1.5% of the distance between axes (L=640 mm)	Approx. 10 mm
Force (F)	Push in the belt carefully until some resistance can be felt.

Sequence of steps



– The toothed belt (1) must deflect by the specified amount (X).

Note: If the deflection distance is not correct, then the toothed belt must be tightened by moving the motor.

Toothed-belt load (F) and deflection (s)

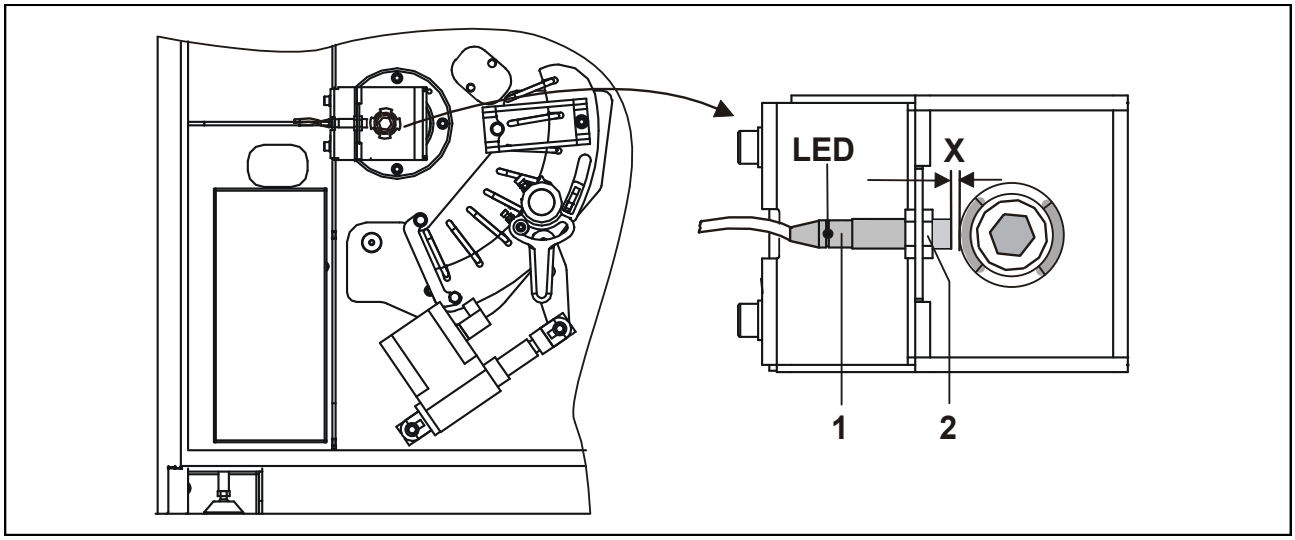
Load (F) on the toothed belt	100 N = 10.0 kg
Deflection (s) of toothed belt	7.00 mm
Measurement with instrument for measuring the belt tension	Frequency = 96 Hz

7.7.4.4 Proximity switch for ascertaining the speed of the opening roller

R/S module, Page 3/7

Correct transmission of pulses for determining the speed of the opening roller.

Sequence of steps



– Use the two nuts (2) to set the proximity switch (1).
  Note: When the proximity switch is active, the LEDs are lit up.
  Proximity switch

Dimension X	1.0 - 2.0 mm

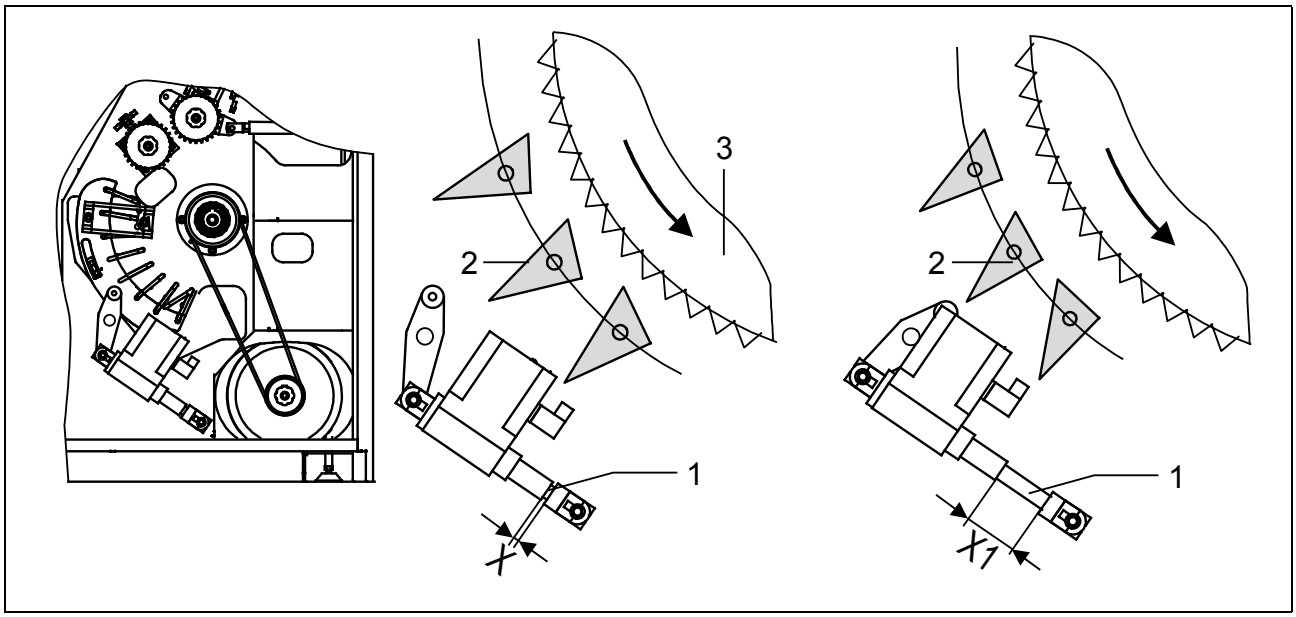
7.7.5 Grating

7.7.5.1 Adjusting the grating (waste volume rate)

R/S module, Page 3/7

The positioning of the electric cylinder lifting rod (1) determines the positions of the dust bars (2). This in turn determines the effectiveness of the dust bars regarding the removal of impurities from the waste as well as its composition. The speed of the opening roller (3) also has an effect on the cleaning intensity as well as on the fibre load.
Setting aim: Optimum degree of cleaning with the least possible waste volume.

Altering the waste volume rate (without the VarioSet)



– Use the data screen to adjust the setting for the electric cylinder lifting rod (1) to the required value.
Note: The more the lifting rod (1) has retracted, the greater the influence of the dust bars (2) on the waste volume rate.
Setting for dust bars (without the VarioSet)

The data-screen setting value of “5” corresponds to the dimension X	Maximum waste volume rate
The data-screen setting value of “100” corresponds to the dimension X1	Minimum waste volume rate

10.1, Page 2/59

– Use the data screen to adjust the speed setting for the opening roller (3) to the required value.
Note: A higher speed can also result in a greater fibre load.

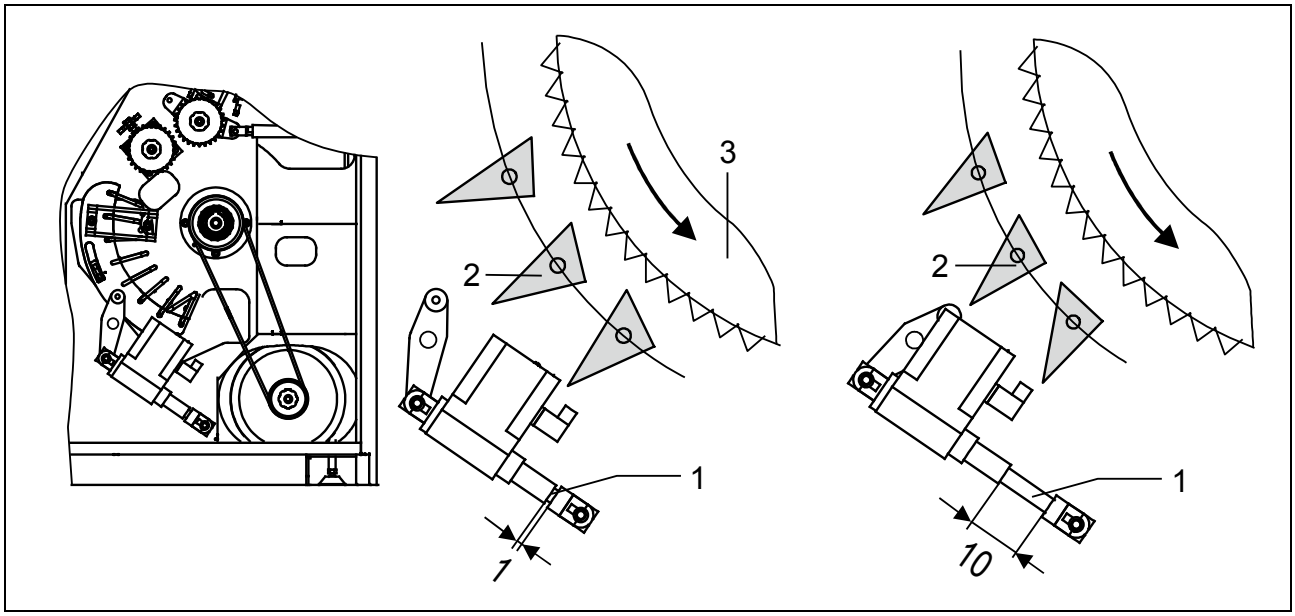
Speed of the opening roller (without the VarioSet)

The data-screen setting value of "500" corresponds to "low speed"	Low cleaning intensity, small fibre load
The data-screen setting value of "1500" corresponds to "high speed"	High cleaning intensity, large fibre load

☞ 10.1, Page 2/59

– It is recommended to analyse the waste composition after each setting alteration.
Note: The optimal setting for a given material must be determined by trial and error.

Altering the waste volume rate (with the VarioSet)

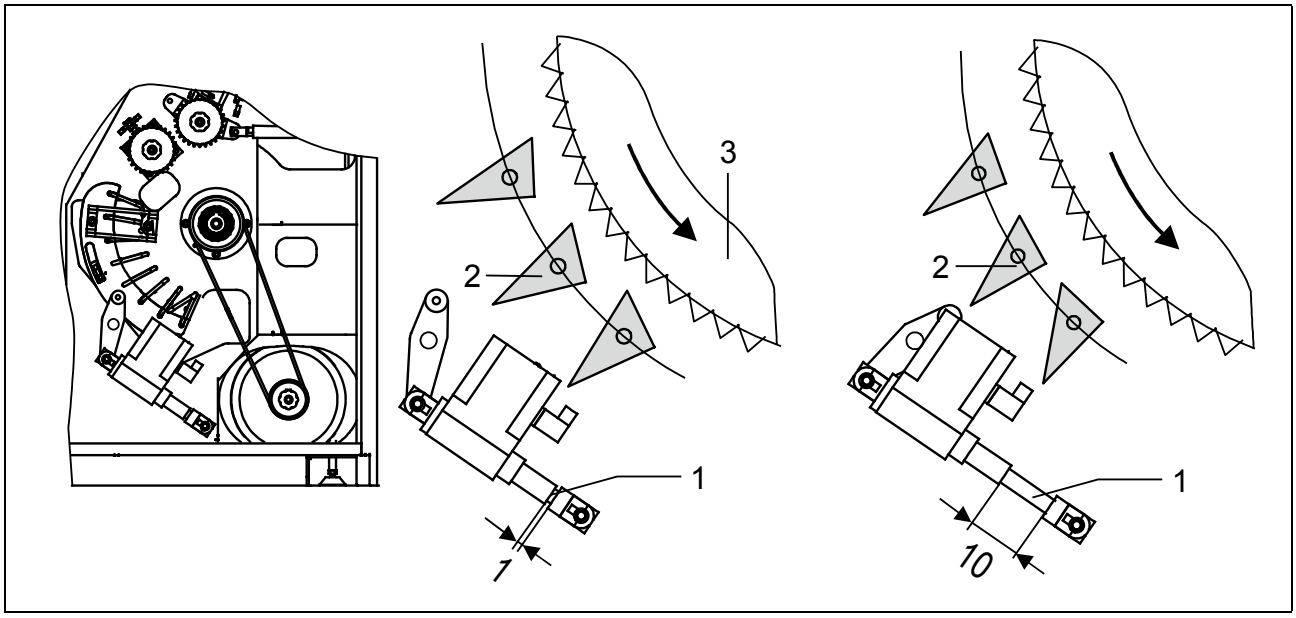


– Use the data screen to adjust the setting for the electric cylinder lifting rod (1) to the required value.
Note: The more the lifting rod (1) has retracted, the greater the influence of the dust bars (2) on the waste volume rate.
Setting for dust bars (with the VarioSet)

Data-screen setting value of “1”	Maximum waste volume rate
Data-screen setting value of “10”	Minimum waste volume rate

☞ 10.1, Page 2/58

– Use the data screen to adjust the speed setting for the opening roller (3) to the required value.
Note: A higher speed can also result in a greater fibre load.



Speed of the opening roller (with the VarioSet)

The data-screen setting value of "0.1" corresponds to "low speed"	Low cleaning intensity, small fibre load
The data-screen setting value of "1.0" corresponds to "high speed"	High cleaning intensity, large fibre load

☞ 10.1, Page 2/58

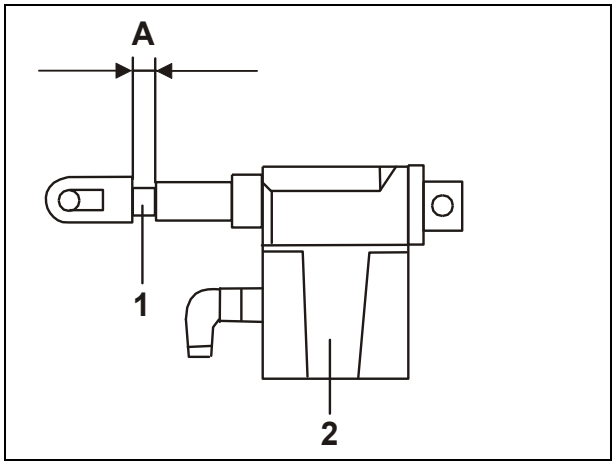
– It is recommended to analyse the waste composition after each setting alteration.
Note: The optimal setting for a given material must be determined by trial and error.

7.7.5.2 Electric cylinder for the grating setting

R/S module, Page 3/7

Setting aim: If an electric cylinder (2) is replaced, the lifting rod (1) is to be set so that it does not move up to the limit stop.

Sequence of steps



– Turn the lifting rod (1) until the required value for dimension (A) is achieved.

Lifting rod

Dimension “A”	7 - 10 mm

– After installing the “M33” electric cylinder, measure the stroke by running the test program. The saved data will thereby be updated.

☞ 82.10, Page 2/74

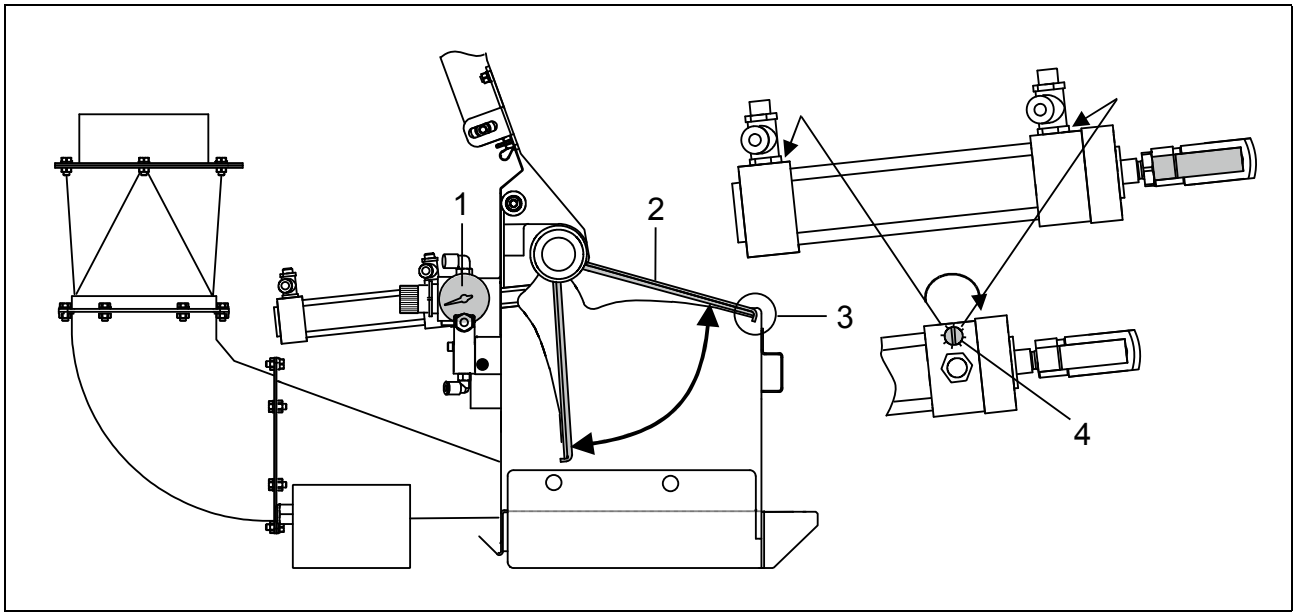
– After installing the “M34” electric cylinder, measure the stroke by running the test program. The saved data will thereby be updated.

☞ 82.11, Page 2/75

7.7.5.3 Setting the waste transport flap

R/S module, Page 3/7

WARNING
Set the main switch to the “off” position and secure it with a lock.



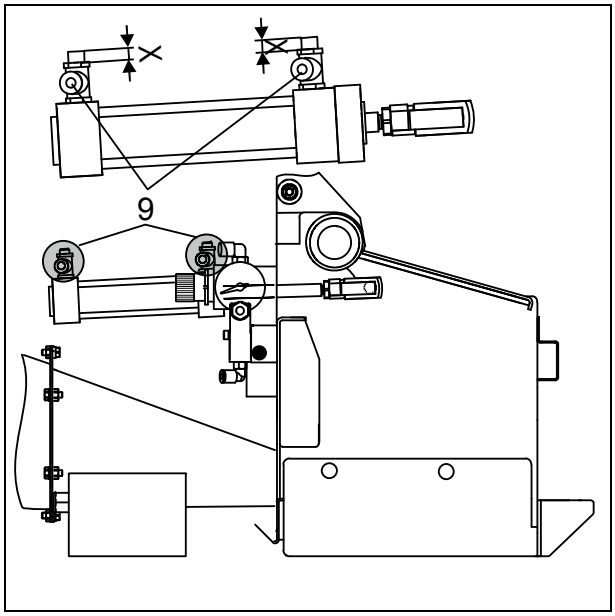
If the flap (2) strikes against the end stop (3), then the setting for the flap (2) will have to be corrected.
The flap (2) must seal the waste chamber at the waste extractor.

Preparatory work

– Screw in all bolts for the end-position dampers (4) completely (clockwise rotation). The end-position dampers are now set for maximum damping.

– Set the pressure at the regulating valve (1) to 1.8 bar.

Exhaust-air throttles settings (standard setting)



– Set both throttles (9) to (X).

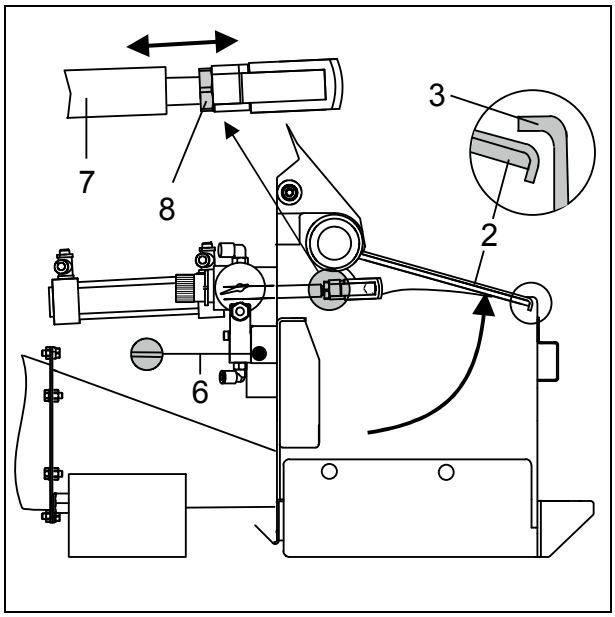
Restriction settings (standard setting)

Dimension X	5.00 mm

– **Prerequisite:** The prescribe pressure of 1.8 bar is set.
Activate the flap (2) using the manual emergency override (6).

– Unless the flap (2) moves to the corresponding end position, unscrew the relevant screw a little.

Flap settings (standard setting)

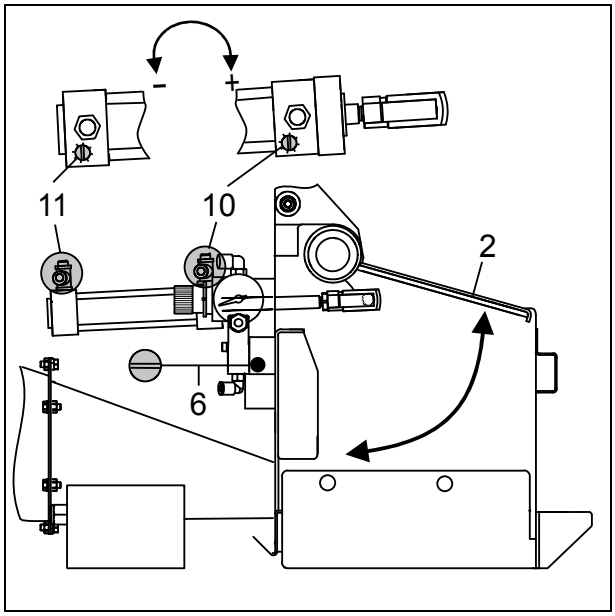


– Using the manual override (6) at the solenoid valve, activate the flap (2).

– Loosen the nut (8) at the fork head.

– By twisting the piston rod (7), set a small gap between the flap (2) and the stop (3).

End-position dampers settings (standard setting)



– Set screws (10) and (11) for the end-position dampers in accordance with specifications.

End-position dampers settings (standard setting)

End-position damper (10)	Screw in, and then unscrew by 3 turns.
End-position damper (11)	Screw in, and then unscrew by 2.5 turns.

– With the aid of the manual emergency override (6) at the solenoid valve, move to both end positions.

– The flap (2) must gently move against both end points.

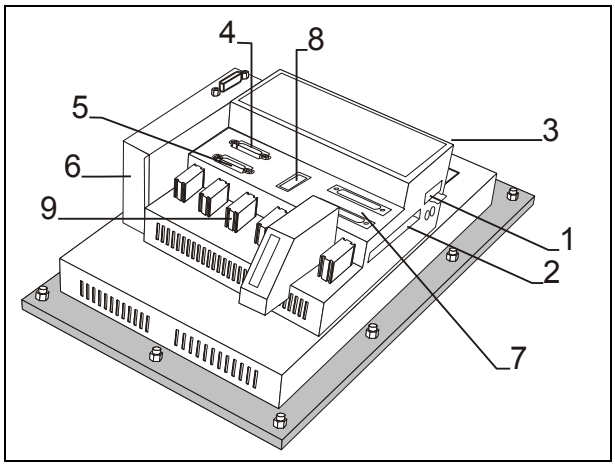
– The dampening effect needs to be increased, if the flap (2) strikes against the end-position dampers causing audible noise. Tighten the screw (10) or (11) (+).

8 Control technique

8.1 Basic module of the control system

8.1.1 Description

Structure

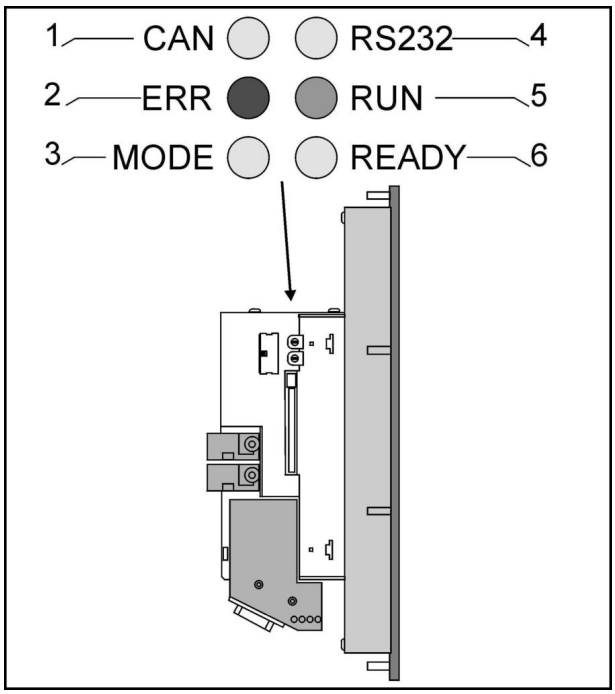


The control system includes the following interfaces and modules:

1: Battery compartment
2 : PCMCIA slot
3 : 6 status LEDs
4 : CAN interface
5 : RS232 interface
6 : Ethernet interface
7 : Digital inputs and outputs
8 : 24 V DC power supply
9 : Expansion slots for additional IO modules

Purpose: Control system for the machine

The machine control system (1) contains the program for the operating unit(2) as well as for the control system of the machine.
Controls all machine functions.



1 *flashes yellow when data is being transmitted from or to the CAN controller*

2 *lights up red in service mode*

3 *lights up yellow when programming the Flash-PROM*

4 *flashes yellow when data is being received or sent at the RS232 interface*

5 *lights up green in RUN and Service modes*

6 *lights up yellow in service mode*

Condition: Status indicator of the control system via LEDs

The 6 LEDs indicate the various possible states of the control system.

8.1.2 Carrying out a cold start

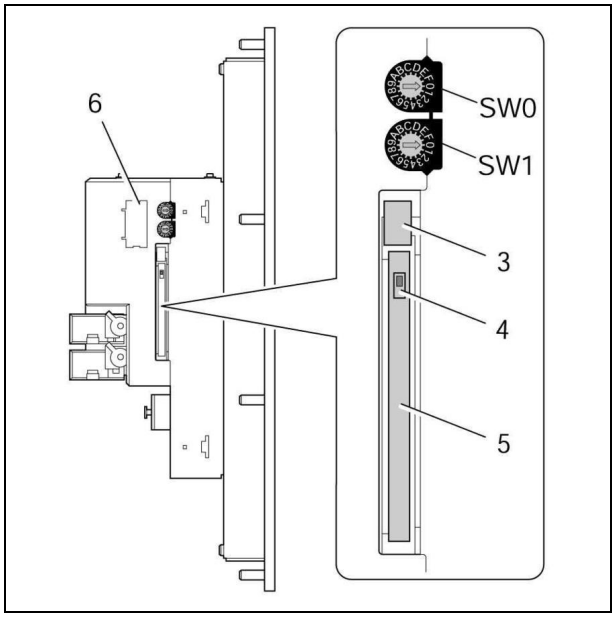
Working with the BuR basic module, Page 3/10

Description Basic module of the control system, Page 6/77

A cold start will reset the control unit to its original state.

Setting aim: A cold start means that the working memory of the machine control unit is erased. The input values are reset to the default values (default settings). A cold start may become necessary, if the control unit fails to start correctly.

Sequence of steps



– Switch off the main switch.

– Remove the cover from the control unit.

– Adjust the ROTARY switches(SW0) and (SW1).

Switch position for cold start

SW0	F
SW1	F

– Switch on the main switch, and then switch off again after about 20 seconds.

– Adjust the ROTARY switches(SW0) and (SW1).

Switch positions for normal operation

SW0	1
SW1	0

– Switch on the main switch again.

⟹ The working memory of the machine control unit is erased. The default values (default settings) are active once more.

– The data (set-up values) must now be re-entered.

8.1, Page 2/77

Finishing

– Re-mount the hood of the control unit.

8.1.3 Control system battery

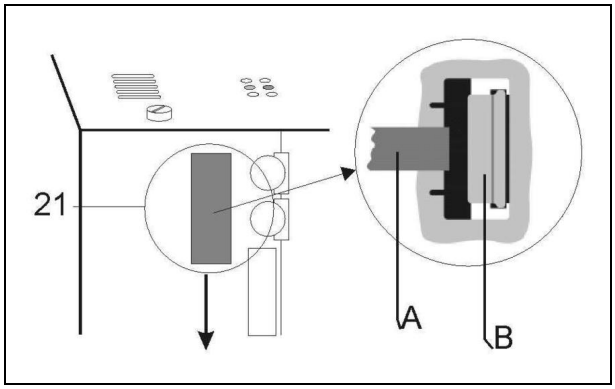
8.1.3.1 Change battery of control system

Working with the BuR basic module, Page 3/10
Removing the battery from the control system, Page 6/80
Mounting the battery in the control system, Page 6/80

8.1.3.2 Removing the battery from the control system

Note: The data (machine settings, shift data) in the data memory are lost if the battery is changed in voltage-free state!

Sequence of steps



- Before starting to work on electronic components always make sure that static electricity is discharged by touching the machine earth cable or other ground connections. If this is not done, the components may be destroyed.
- Use a screwdriver to remove the cover (21) of the battery.
- Pull the pullout strip (A) and the battery (C) will jump out of its holder.

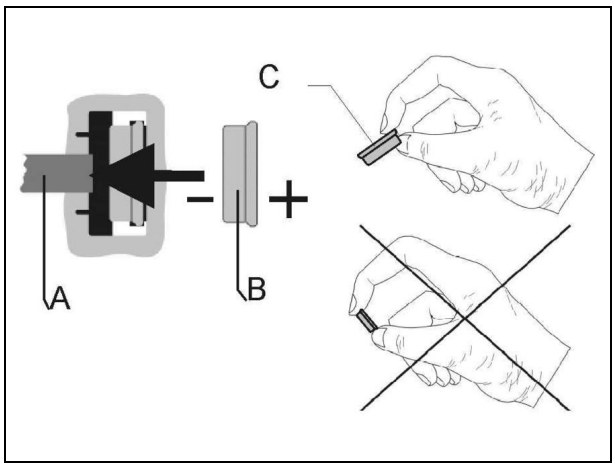
8.1.3.3 Mounting the battery in the control system

Note: Do not grasp the battery with nippers or non-insulated pincers. Risk of short circuit.

Note: The battery may only be touched by hand on the front (C)

Note: Lithium batteries are considered to be special waste, and must therefore be disposed of in an appropriate manner.

Sequence of steps



- Insert new lithium battery (B) with correct polarity (-+) in the battery compartment. To do so pull the extracting strip (A) to the left and insert the battery in the battery compartment with the "+"-end to the right.

  Note: To allow the battery to be pulled out again later the extraction strip must (A) be on the left of the battery.
- Put the projecting end of the strip (A) underneath the battery so that it does not stick out of the battery compartment.
- Mount cover. First put the bottom end of the cover in the opening of the battery compartment. The top end snaps onto the cover with a little pressure.

8.1.4 Compact Flash card

8.1.4.1 Software exchange between memory card and control system

- Loading software, Page 3/8
- Replacing the operating unit (including the control unit), Page 3/9
- Working with the BuR basic module, Page 3/10

Copy software from the memory card onto the control system or vice versa. A memory card (PCMCIA card) is required with a minimum of 4 MB.

Preparatory work

– Note the positions of the two rotary switches SW0 and SW1, so that they can be reset to their original positions after copying.

– If the memory card is to be overwritten, the write-protection must be deactivated.

☞ Switch off write protection, Page 6/83

– You will have to record/write down all the settings contained in the data screens, if the control system is to be overwritten.

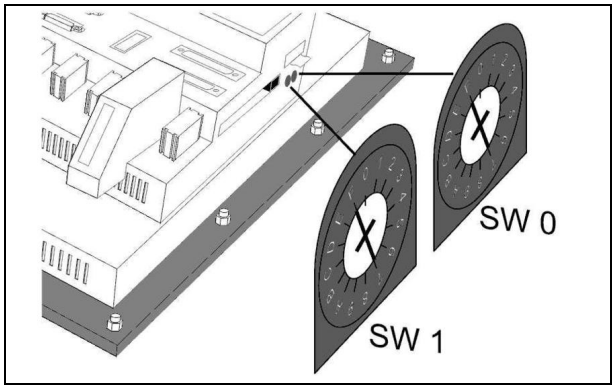
Sequence of steps

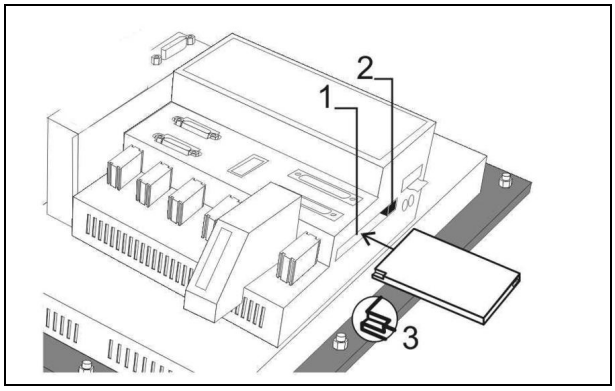
– Turn off the main switch of the machine.

– Set the rotary switches SW0 and SW1, according to the direction of the data exchange.

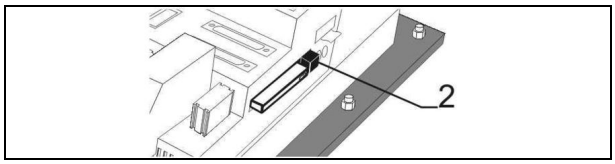
Rotary switch setting for software exchange

From memory card to control unit	SW0=4 and SW1=F
From control unit to memory card	SW0=2 and SW1=F





– Insert the memory card in the slot (1). Here, the cut-out (3) in the memory card needs to be located on the opposite side of the ejection button (2).



Inserted correctly

The memory card is not inserted correctly unles the ejection key (2) is out.

– Turn on the main switch again.

– Watch the status LED. The LEDs "Mode", Ready" and "Run" are lit up during the copying process.

– Wait until the RUN LED (green) and the READY LED (yellow) are flashing. Then the software update is finished.
Note: If the ERROR LED (red) flashes, the software update was not successful. In this case, repeat the process or contact Rieter Service.

– Turn off the main switch of the machine.

– Eject the memory card by pressing the eject key (2) and remove.

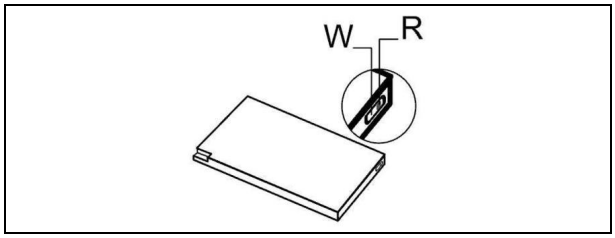
– Perform a cold start.
☞ Carrying out a cold start, Page 6/79

– Turn on the main switch again.

– **Prerequisite:** If the control system has been overwritten:
Re-enter the settings in the data screens.
Note: You can see from the software version whether copying has been successful,

8.1.4.2 Switch off write protection

Working with the BuR basic module, Page 3/10



The small switch on the memory card allows the write protection to be switched on and off.

Setting aim: If data need to be transferred to the memory card the write-protection must be switched off.

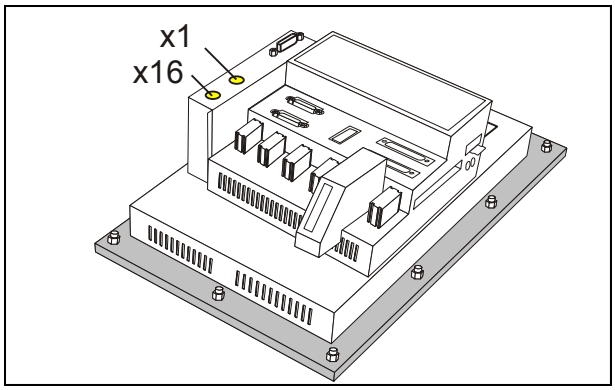
Protective writing

No	Position (R) = "read"
off	Position (W) = "write"

8.1.5 Ethernet interface 3IF of the control system

8.1.5.1 Setting the IP address

Replacing the operating unit (including the control unit), Page 3/9
Working with the BuR basic module, Page 3/10



The IP address is the communication address in the Ethernet system.

The final two digits of the IP address are variable, and must be set at the (x16) and (x1) switches.

Setting aim: Each machine in the Ethernet network must be assigned an unambiguous IP address.

Interface to external system	SPIDERweb

Setting the IP address

dez	hex	dez	hex	dez	hex	dez	hex
0	00	16	10	32	20	48	30
1	01	17	11	33	21	49	31
2	02	18	12	34	22	50	32
3	03	19	13	35	23	51	33
4	04	20	14	36	24	52	34
5	05	21	15	37	25	53	35
6	06	22	16	38	26	54	36
7	07	23	17	39	27	55	37
8	08	24	18	40	28	56	38
9	09	25	19	41	29	57	39
10	0A	26	1A	42	2A	58	3A
11	0B	27	1B	43	2B	59	3B
12	0C	28	1C	44	2C	60	3C
13	0D	29	1D	45	2D	61	3D
14	0E	30	1E	46	2E	62	3E
15	0F	31	1F	47	2F	63	3F

– Turn off the main switch of the machine.

– Turn the two ROTARY switches to set the final two digits. Example: set the decimal number “21” for the IP address 172.27.10.21.
Note: Set (x16) rotary switch position to “1” and (x1) rotary switch position to “5” (since the hexadecimal number “15” is equivalent to the decimal number “21”).

ROTARY switch

x1	Last digit
x16	Second-last digit

– Turn on the main switch again.

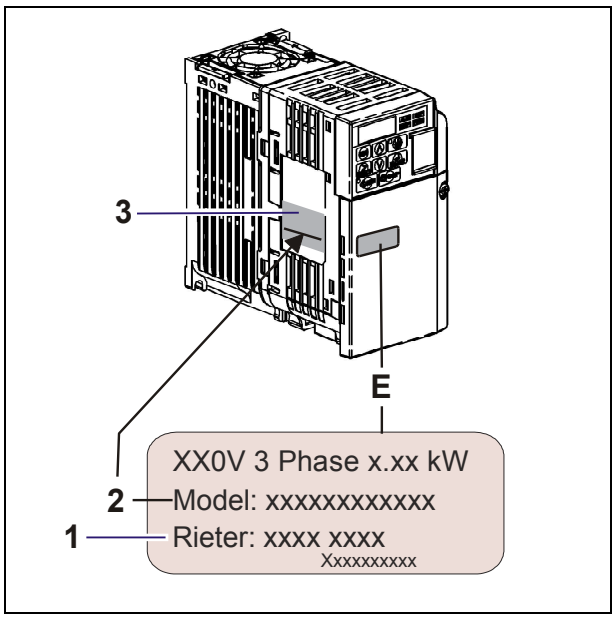
– Check the IP address in the following data screen.

Data mask	30.1

8.2 Frequency converter

8.2.1 Identifying the frequency converter

Replace the frequency converter, Page 3/10



The Rieter article number (1) on the attached adhesive label (E) has to agree with the article number of the respective device in the electrical documentation. The model designation (2) has to agree with the designation on the manufacturer's label (3) on the side of the frequency converter.

8.2.2 Regenerating the replacement frequency converter

DANGER
Even after the appliance has been disconnected from the mains, the intermediate circuit remains live (intermediate circuit capacitor).
Failure to observe the discharge duration specification can lead to fatal injuries.
Only qualified electricians are permitted to work at the frequency converter.
A 10-minute wait period (discharge duration) is required following disconnection from the mains.
Avoid contact with any live parts.
Wait until the LED (CHARGE) is no longer lit. Then wait a further 5 minutes.
Check the voltage for the intermediate circuit. The voltage has to have dropped to below 30 volts.

The replacement frequency converters held in storage must be connected to a mains supply for at least one hour every six months. This allows the internal component to regenerate themselves.

Setting aim: The replacement equipment can be put into service at any time.

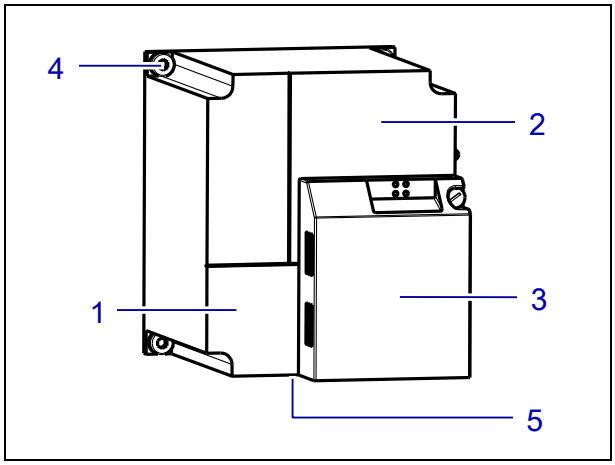
Sequence of steps

– Remove the frequency converter.
  ☞ Removing the frequency converter, Page 6/86
– Install the frequency converter.
  ☞ Installing the frequency converter, Page 6/88

8.2.3 Frequency converter

8.2.3.1 Description

Structure



The frequency converter series contains models with differing designs. These differ in size and form according to the design. The main components of each version are nevertheless the same.

1 Power unit
2 Operating unit
3 Option board
4 Retaining screws
5 Cable duct

8.2.3.2 Replacing the frequency converter

☞ Removing the frequency converter, Page 6/86
☞ Installing the frequency converter, Page 6/88

Note: Frequency converters are subject to natural aging effects. Frequency converters are to be replaced at regular intervals with inspected replacement equipment. Doing so effectively prevents equipment failure. Authorized RIETER Service Personnel only may service frequency converters. For replacement equipment / service: Please contact your nearest RIETER Service Center or RIETER Parts.

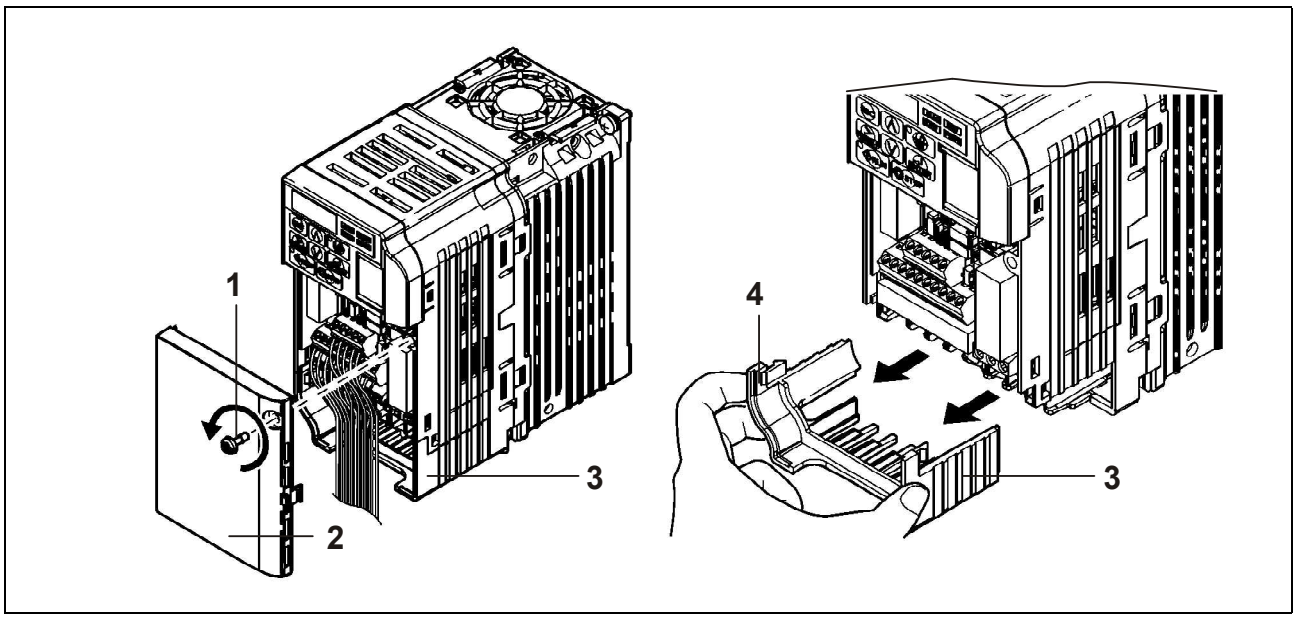
8.2.3.3 Removing the frequency converter

WARNING
When the main switch is set to the "on" position, elements downstream of the main switch are live.
Injury due to electric shock.
Prior to commencing electrical installation work, switch off the machine via the main switch and secure the switch with a padlock.

☞ Description Frequency converter, Page 6/85

Note: The actual appearance of the housing to be removed may differ from the illustration.

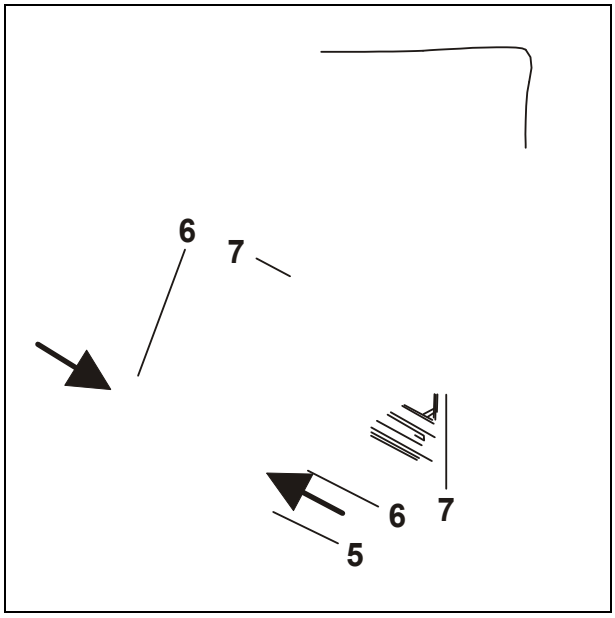
Removing the cover from the power unit



– Loosen the screw (1) and remove the cover (2).

– Press the pawls (4) of the cover (3) inwards.

– Remove the cover (3) in the direction of the arrow.



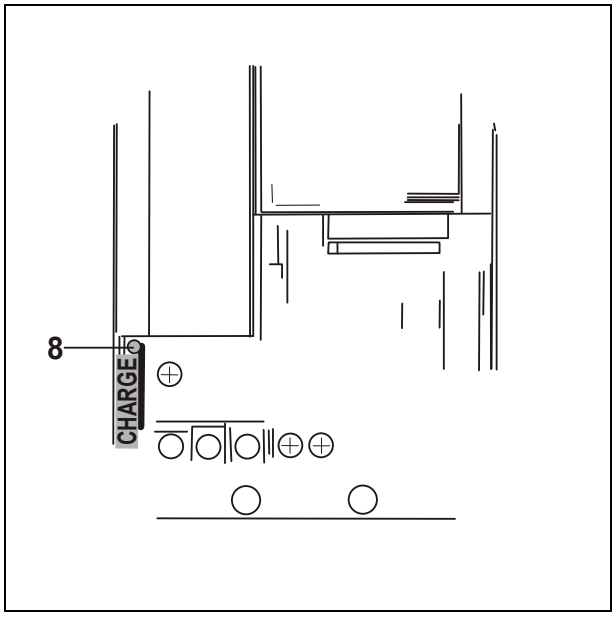
– Carefully press the detention pawls (6) on both sides of the module (5) inwards.
  ⟹ The pawls (6) are released from the recesses (7).
– Remove the module (5).

Reading data off the charge indicator

DANGER
Even after the appliance has been disconnected from the mains, the intermediate circuit remains live (intermediate circuit capacitor).
Failure to observe the discharge duration specification can lead to fatal injuries.
Only qualified electricians are permitted to work at the frequency converter.

A 10-minute wait period (discharge duration) is required following disconnection from the mains.
Avoid contact with any live parts.
Wait until the LED (CHARGE) is no longer lit. Then wait a further 5 minutes.
Check the voltage for the intermediate circuit. The voltage has to have dropped to below 30 volts.

– Check whether or not the (CHARGE) LED lights up.
  ⟹ The LED will light up if the voltage for the intermediate circuit still exceeds 50 VDC.



– Wait until the (CHARGE) LED has gone out.
– After the (CHARGE) LED has gone out, wait a further 5 minutes.
– Measure the residual voltage between the terminals with the designations (-) and (+1) (intermediate circuit).
  Note: The positioning of these terminals within the power block is dependent on the design.
– As soon as the residual voltage for the intermediate circuit has dropped to below 30 VDC, disconnect the cables.

Disconnecting the cables

– Check the markings on the terminals and cables. Ensure that the cables are connected correctly during re-installation.

– Disconnect the power and control terminals.

– Disconnect the earth terminals.

– Do not pull the cables out of the cable ducts.

  Note: The cable ducts remain in the electrical control cabinet of the machine while the frequency converter is being replaced.

– Loosen the four retaining screws and remove the frequency converter.

8.2.3.4 Installing the frequency converter

WARNING
When the main switch is set to the "on" position, elements downstream of the main switch are live.
Injury due to electric shock.
Prior to commencing electrical installation work, switch off the machine via the main switch and secure the switch with a padlock.

Identifying the frequency converter

– Prior to installation, check that the device is available.

  ☞ Identifying the frequency converter, Page 6/84

– Equip the device appropriately.

  ☞ Equipping the frequency converter, Page 6/89

– Configure the device for use with the machine.

  ☞ Configuring the frequency converter, Page 6/90

– Install the device, applying the same steps used for removal, but in reverse order.

Connecting cables

– Apply the same steps used for removal, but in reverse order.

– Connect the control, power and earth cables according to their designations.

  Note: Pay attention to the electric documentation.

– Pay attention to the specifications concerning the connection of the earth cable.

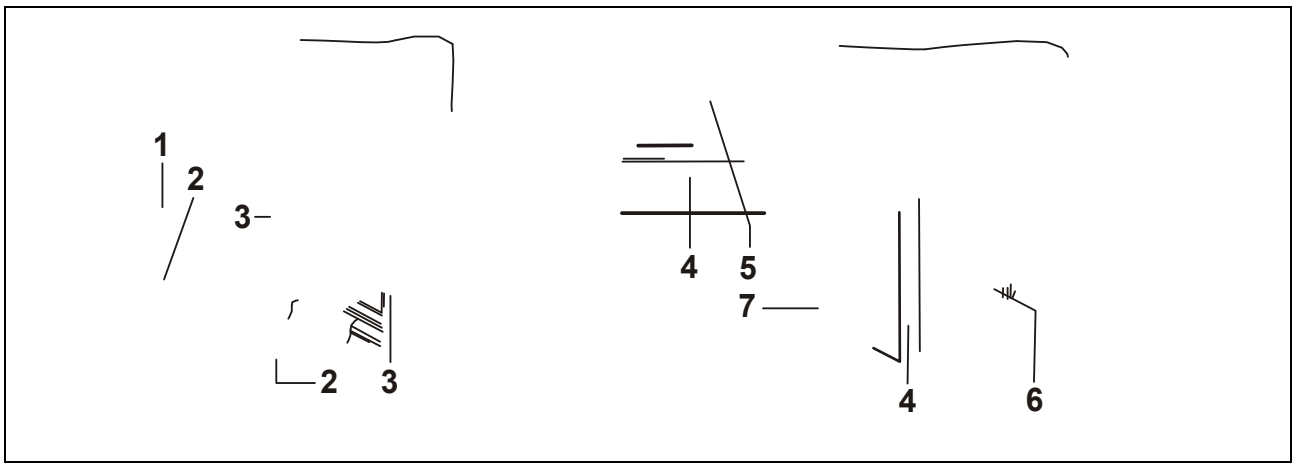
  ☞ Equipping the frequency converter, Page 6/89

8.2.3.5 Equipping the frequency converter

Replace the frequency converter, Page 3/10

The device has to be equipped according to its design.

CAN module (SI-S3/V)



– Gently press the detention pawls (2) on both sides of the module (1)inwards.

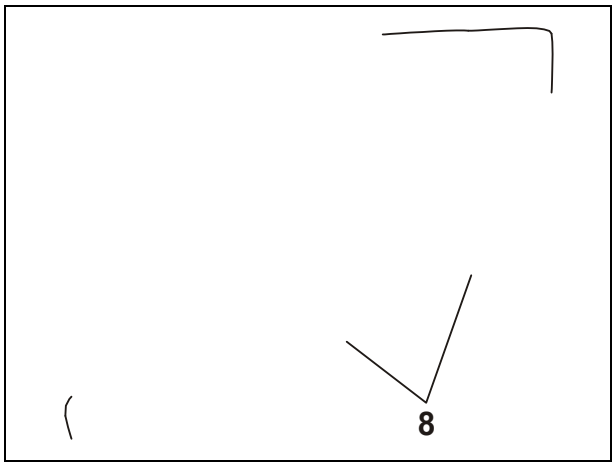
– Press on the module (1) until the pawls (2) lock into place in the recesses (3)

Connecting the earth cable of the CAN module

– **Prerequisite:** For all variants, the earth cable (4) running from the CAN module to the frequency converter has to be kept as short as possible.
Attach the earth cable (4) to the earth terminal (5) of the CAN module.

– Attach the earth cable (4) to the earth terminal (6) of the frequency converter.
Note: For all variants, the earth cable has to be run in such a way that any covers can be closed correctly.

– Insert the connector (7) of the CAN bus cable.



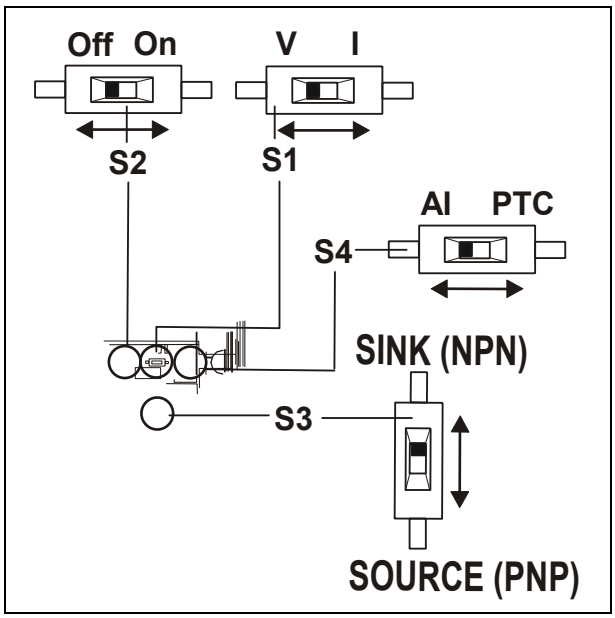
– Fit the covers (8)

8.2.3.6 Configuring the frequency converter

Replace the frequency converter, Page 3/10

DANGER
Even after the appliance has been disconnected from the mains, the intermediate circuit remains live (intermediate circuit capacitor).
Failure to observe the discharge duration specification can lead to fatal injuries.
Only qualified electricians are permitted to work at the frequency converter.

A 10-minute wait period (discharge duration) is required following disconnection from the mains.
Avoid contact with any live parts.
Wait until the LED (CHARGE) is no longer lit. Then wait a further 5 minutes.
Check the voltage for the intermediate circuit. The voltage has to have dropped to below 30 volts.



The frequency converter is configured using the (S1...S4) switches on the control card.

Setting the S1, S2, S3 DIP switches

– Set the S1 switch.
S1 switch position:

U21 frequency converter	I
U22 frequency converter	I
U23 frequency converter.	I
U31 frequency converter	I
U32 frequency converter	I
U37 frequency converter	I

– Set the S2 switch.
S2 switch position:

U21 frequency converter	On
U22 frequency converter	On
U23 frequency converter.	On
U31 frequency converter	On
U32 frequency converter	On
U37 frequency converter	On

– Set the S3 switch. (Digital inputs of the frequency converter.)
S3 switch position:

U21 frequency converter	SINK (NPN)
U22 frequency converter	SINK (NPN)
U23 frequency converter.	SINK (NPN)
U31 frequency converter	SINK (NPN)
U32 frequency converter	SINK (NPN)
U37 frequency converter	SINK (NPN)

– Set the S4 switch.
S4 switch position:

U21 frequency converter	AI
U22 frequency converter	AI
U23 frequency converter	AI
U31 frequency converter	AI
U32 frequency converter	AI
U37 frequency converter	AI

8.2.3.7 Adapting to the cooling system

Replace the frequency converter, Page 3/10

Adapt the frequency converter to the cooling system used in the machine.

Heat transfer plate

– Use a spatula to remove old heat transfer compound residue from the heat transfer plates.
Note: Use solvent to remove any remaining traces of residue.

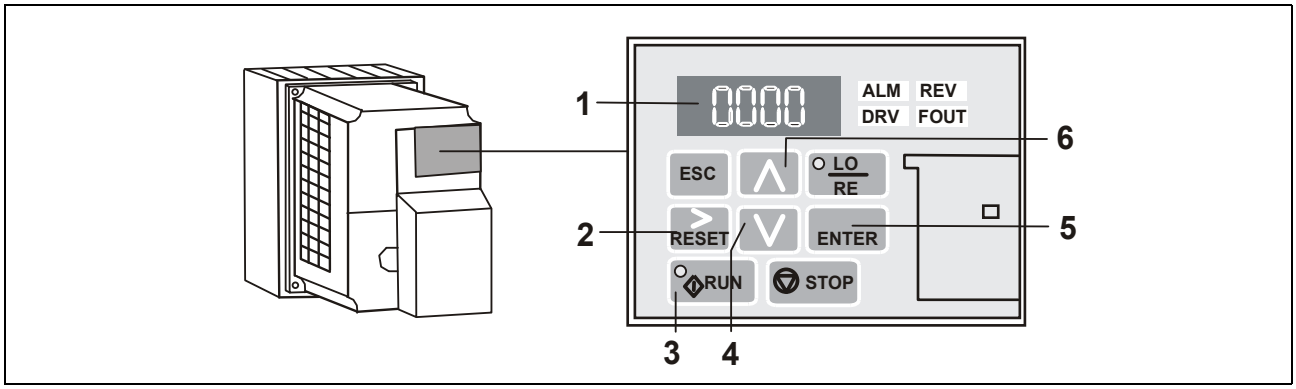
– Check whether or not the transfer plate is damaged. Carefully file off or grind off any local unevenness.

– **Prerequisite:** Before installing the device:
Coat the heat transfer plate with heat transfer compound, applying it uniformly and across the entire surface.
Note: Use a paint roller instead of a brush.
Requirements for the heat transfer compound

Composition	Silicone-free
Thermal conductivity	0.9 - 1.0 W/mK

8.2.3.8 Setting the T1000V frequency converter

Replace the frequency converter, Page 3/10



Whenever the frequency converter is replaced, the baud and the node address have to be set.

Preparatory tasks prior to making the settings

– **Prerequisite:** Voltage has to be applied to the frequency converter to be set.
Switch on the machine via the main switch.

Setting authorisation (for all frequency converters)

– Press key (4) or (6) until the parameter(PAr) appears on the display (1).

– Confirm using key (5).

– The parameter (A1-01) flashes on the display (1).

– Press key (5) several times until the display indicates the parameter value.

– Use key (2) to move from one digit to the next and keys (4) and (6) to adjust the value («0002»).

– Confirm using key (5).
Note: («End») lights up briefly, followed by the set value («0002») and finally (A1-01).
⟹ The authorisation for changing any parameter value has now been set up.

Initialisation (for all frequency converters)

– **Prerequisite:** Authorisation has been set up and (A1-02) is being flashed on the display.
Use key (6) to increase the final digit of the display (1) to («3»).

– Confirm using key (5).

– Using keys (2) (4) and (6), enter the value («2220»).

– Confirm using key (5).
Note: Once initialisation is complete, (A1-03) appears again.

Communication parameter: Select the “Do not initialise” setting

– **Prerequisite:** Authorisation has been set up and (A1-02) is being flashed on the display.
Use key (2) to move to letter (A) on the display (1).

– Use key (6) to change the (A) to an (F).

– Use key (2) to select the parameter (F6-08).

– Confirm using key (5).
– Use key (2) to select the final digit.
– Use keys (4) and (6) to set the value («00»).
– Confirm using key (5).

Setting the baud

– **Prerequisite:** Authorisation has been set up and (A1-02) is being flashed on the display.
  Use key (2) to move to letter (A) on the display (1).
– Use key (6) to change the (A) to an (F).
– Use key (2) to select the parameter (F6-36).
– Confirm using key (5).
– Use key (2) to select the final digit.
– Using keys (4) and (6), set the («0»).
  Note: With the value set to («0»), the search for the baud occurs automatically..
– Confirm using key (5).

Setting the node address (dependent on the frequency converter selected)

– **Prerequisite:** Determine the node address of the respective frequency converter from the electrical circuit diagram. Authorisation has been set up and (A1-02) is being flashed on the display.
  Use key (2) to move to letter (A) on the display (1).
– Use key (6) to change the (A) to an (F).
– Use key (2) to select the parameter (F6-35).
– Confirm using key (5).
– Use key (2) to select the final digit.
– Using keys (4) and (6), set the node address.
  Note: The node address is indicated in the relevant data screen.
  ☞ 30.6, Page 2/63
– Confirm using key (5).

Finishing

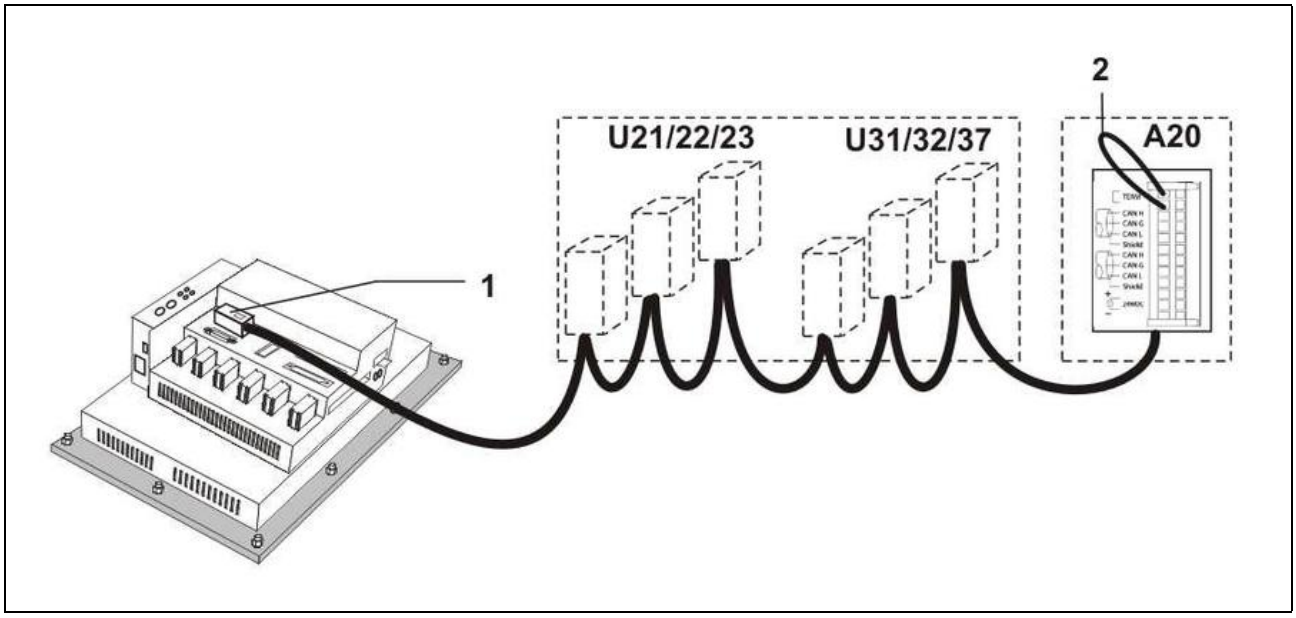
– After the settings have been made, select “Automatic mode” in data screen 80.1.
  ⟹ The machine prepares for operation. “Ready for operation” appears on the status line.

8.3 Bus systems

8.3.1 Terminating resistor for CAN bus

8.3.1.1 Setting or wiring in the terminating resistors for the CAN-Bus.

Replacing the operating unit (including the control unit), Page 3/9



Setting aim: A terminating resistor must be present at the first and last connection so that the CAN-Bus can function correctly.

Setting the terminator at the sub-D connector

– The switch on a D-Sub plug (1) must be set on "ON".

Wire the terminator.

– On the A20 module, a bridge (2) to the “Term” terminals must be fitted.

Finishing

– Check that a terminating resistor has only been wired in on the first and last connection.

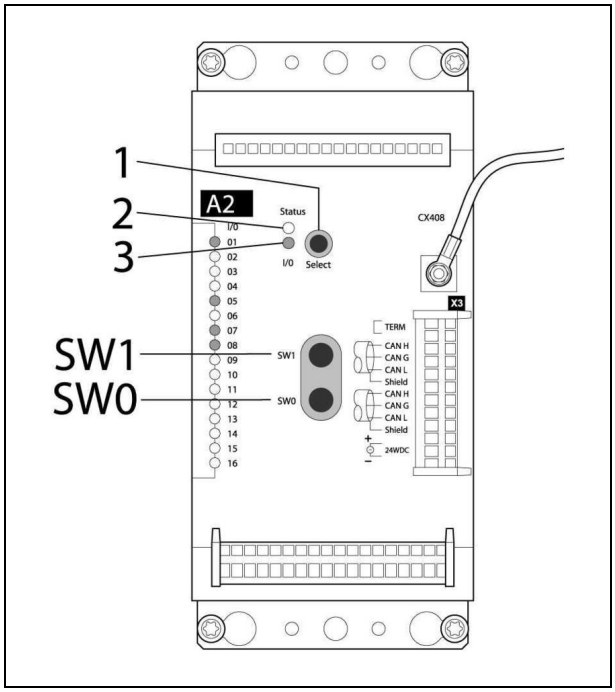
8.4 External I/O card

8.4.1 CAN IO module CX408

8.4.1.1 Checking CAN I/O module CX408

Use the LEDs to test the CAN I/O modules CX408 and their inputs and outputs

You can use the 16 LEDs to test the status of the inputs and outputs.



- The 16 LEDs indicate the state of either the inputs or the outputs. Use the switch (1) to change over the LEDs. If LED (3) lights up green, the 16 LEDs are indicating the state of the inputs. If LED (3) lights up yellow, the 16 LEDs are indicating the state of the outputs.
- Use LED (2) to check whether the module is working properly during operation.
- If the LED is green, the module is working properly.
- If the LED flashes yellow, the supply voltage of the outputs is incorrect.
- If the LED lights up yellow, the outputs are defective.

Action

Check of the LED indicates a fault.

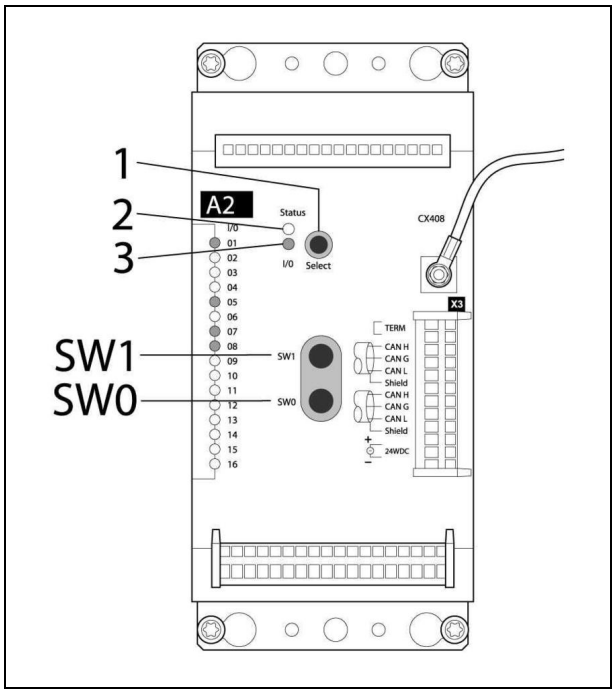
- Possibly replace module or feed and check the wiring.

8.4.1.2 Set the CAN node address of the CAN I/O module CX408

Replacing the operating unit (including the control unit), Page 3/9
CAN node module, Page 3/10

Via two rotary switches an address specified by Rieter is set on each module on the CAN bus.

Sequence of steps



– Set the rotary switch (SW0) and (SW1).

Note: The following correct setting is important, otherwise the connection to the control system will not work.

Addresses for A20 CAN nodes

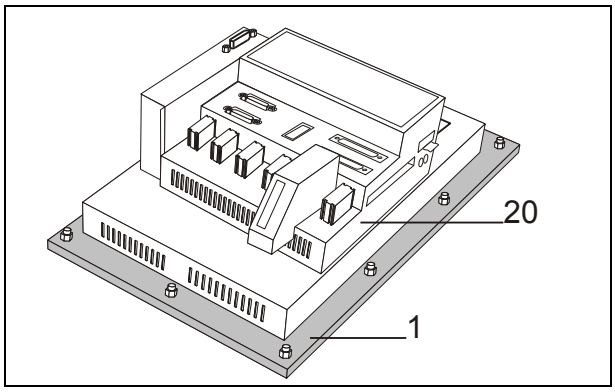
SW0	2
SW1	4

9 Operating and display elements

9.1 Operator panel

9.1.1 Description

Structure



The operator panel (1) and the machine control system (20) form a unit.

Purpose: Operator panel

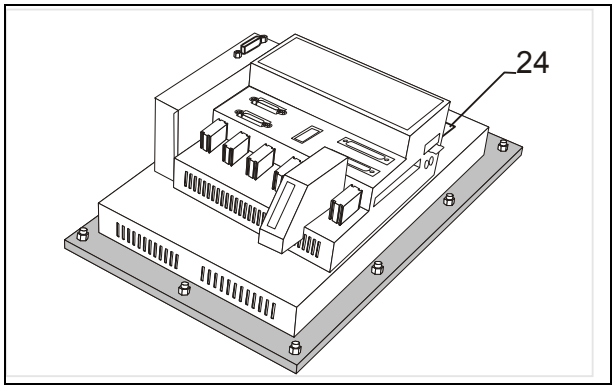
The controls and displays on the operator panel (1) enable functions to be carried out, input and queries to be made.

Purpose: Machine control system

The machine control system (20) contains the program for the operator panel (1) as well as for the controller of the machine.
Controls all machine functions.

9.1.2 Inserting the modules and plugs on the operator panel

Replacing the operating unit (including the control unit), Page 3/9
Description Operator panel, Page 6/97



The modules and plugs have to be inserted according to the electric manual.

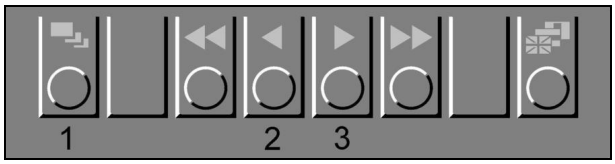
Setting aim: Equipping the control system specifically for the machine.

9.1.3 Adjusting the contrast on the display unit

Replacing the operating unit (including the control unit), Page 3/9

The brightness of the display needs adjusting depending on the lighting. If the setting is wrong black stripes will be visible.

Sequence of steps



– **Prerequisite:** The overview (basic screen or malfunction) is displayed.

  Hold the "BASIC-DISPLAY-key" (1) down. Simultaneously press the "DATA-DISPLAY-key-backward (2)". The screen gets darker..

– Hold the "BASIC-DISPLAY-key" (1) down. Simultaneously press the "DATA-DISPLAY-key-forward (3)". The screen gets lighter.

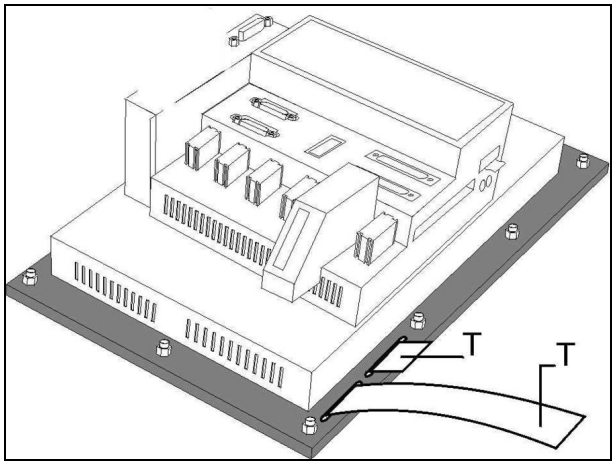
9.1.4 Key strip of the operator panel

9.1.4.1 Change keyboard strip

Replacing the operating unit (including the control unit), Page 3/9
Pull out the keyboard strip, Page 6/99
Insert keyboard strip, Page 6/99

9.1.4.2 Pull out the keyboard strip

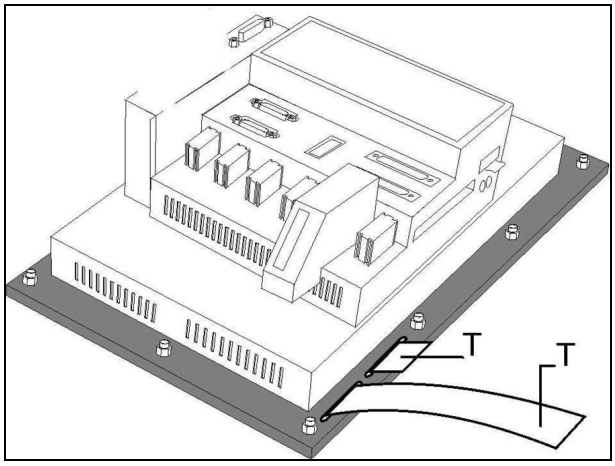
Sequence of steps



– Loosen the nuts on the circumference of the operator panel.
– Pull out the keyboard strip (T).
– Tighten the nuts on the circumference of the operator panel again.

9.1.4.3 Insert keyboard strip

Sequence of steps



– Undo the nuts on the circumference of the operator panel.
– Insert keyboard strip (T)
– Tighten the nuts on the circumference of the operator panel again.

10 Torque standard

Screw dimension	Strength class	torque	Clamping strength
M4	8.8	3.1 Nm	3.9 kN
	10.9	4.5 Nm	5.7 kN
	12.9	5.3 Nm	6.7 kN
M5	8.8	6.1 Nm	6.4 kN
	10.9	8.9 Nm	8.3 kN
	12.9	10.4 Nm	10.9 kN
M6	8.8	10.4 Nm	9.0 kN
	10.9	15.5 Nm	13.2 kN
	12.9	18.0 Nm	15.4 kN
M8	8.8	25.0 Nm	16.5 kN
	10.9	37.0 Nm	24.2 kN
	12.9	43.0 Nm	28.5 kN
M10	8.8	51.0 Nm	26.0 kN
	10.9	75.0 Nm	38.5 kN
	12.9	87.0 Nm	45.0 kN
M12	8.8	87.0 Nm	38.5 kN
	10.9	130.0 Nm	56.0 kN
	12.9	150.0 Nm	66.0 kN
M16	8.8	215.0 Nm	72.0 kN
	10.9	310.0 Nm	106.0 kN
	12.9	370.0 Nm	124.0 kN
M20	8.8	430.0 Nm	117.0 kN
	10.9	620.0 Nm	166.0 kN
	12.9	720.0 Nm	194.0 kN
M24	8.8	740.0 Nm	168.0 kN
	10.9	1080.0 Nm	239.0 kN
	12.9	1240.0 Nm	280.0 kN

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Appendix

*** ERROR (Appendix): Appendix not implemented!